Southwestern AVIATION

NOVEMBER 8568 1935

THIS ISSUE

The Tragedy of The Stick

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Clicks From The Clouds

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Florida Prepares

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New Aircraft

Douglas Sleeper-Transport

Curtiss-Wright Coupe

Consolidated XP3Y

•

Twenty Cents

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Devoted to the Advancement of Aeronautics in the World's Most Natural Flying Regions—The South and Southwest

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Curtiss Attack Planes Over Barksdale

With the removal of the Third Attack Group from Fort Crockett, Texas, to Barksdale Field, Shreveport, Louisiana, the Central Wing of the General Headquarters Air Force is rendered a more effective, concentrated unit of national defense.

The nine Curtiss Attack planes of the Third Attack Group in step formation were led by Colonel Earl Naiden during recent exercises held at Barksdale Field.

These planes, each powered by a 700-horsepower Wright Cyclone engine, are equipped with five machine guns and a load of bombs. They are capable of 200 miles per hour.

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Editorials and Comments

Implements of War

WE MUST admire the recent left-handed compliment President Roosevelt tendered airplanes as effective machines of war. However, in his proclamation issued late in September enumerating articles constituting "arms, ammunition and implements of war," which cannot be legally manufactured or exported without a Federal license after November 29, brings forth many potential worries to the aircraft manufacturing business.

In the proclamation, airplanes are listed along with submarines, machine guns, ammunition and tanks. The aircraft field is pretty well covered:

"Category III. (1) Aircraft, assembled or dismantled, both heavier and lighter than air, which are designed, adapted and intended for aerial combat by the use of machine guns or of artillery or for the carrying and dropping of bombs, or which are equipped with, or which by reason of design or construction are prepared for, any of the appliances referred to in paragraph 2, below. (2) Aerial gun mounts and frames, bomb racks, torpedo carriers, and bomb or torpedo release mechanisms.

"Category V. (1) Aircraft assembled or dismantled, both heavier and lighter than air, other than those included in category III. (2) Propellers or air screws, fuselages, hulls, tail units, and under-carriage units. (3) Aircraft engines."

That just about covers the field.

The President took legal action under section 2 of the neutrality act which establishes a permanent licensing system for the manufacture, export and import of arms and munitions. It may or may not mean an embargo under a subsequent proclamation. The danger rests in the fact that the President's power in that respect is practically unlimited.

Even now the industry suffers restrictions in the export of equipment to certain nations enjoying peace, because certain nations might export our airplanes on to belligerents, who, in turn, would utilize them in warfare! All aircraft would be subject to this action in case embargo came.

In the proclamation, motor trucks are not listed. There is no mention of steel, oil, copper, cotton or other raw material essential to modern warfare. Consequently, no matter the type of equipment, the airplane manufacturing industry experiences a new discrimination. It has been said that all types of aircraft were listed because of the ease with which airplanes built here for commercial or sporting purposes can be adapted as fighting craft. Apparently, someone doesn't know the difference between types of airplanes and their peculiar scope of utility.

We can honestly appreciate the determination of the United States to steer clear of armed conflict with other nations; but we cannot condone the pious and holier-than-thou attitude that would go so far as to interfere with the sale of American aircraft to foreign nations. It is just as ridiculous to ban the export of airplanes as it would be to place an embargo on oil, because the oil might be used to furnish fuel for battleships; or cease shipments of steel, copper and cotton because these commodities might ultimately end up in the form of arms and ammunition. Yet these commodities are not listed. The license requirement brings new red-tape and new interference from the Government. Any applicant willing to pay the $500 license fee cannot be refused by the State Department; nor can any registered applicant be refused a license to export listed articles unless such shipment would violate an existing embargo or law of the United States.

However, the manufacturing end of the business is more vulnerable than ever and unless there is a reversal in the current trend towards disrupting foreign markets, all American manufacturers of aircraft might easily suffer a serious set-back.

The Valuable Dr. Brock

THE aviation family includes many famous citizens, who, through some individual spark of ability or genius, have managed to achieve various degrees of greatness for themselves and for flight.

In years gone by, most of the renowned airmen ascended the throne of fame by way of spectacular and unusual demonstrations of flying ability whether on the race course, over uncharted air lanes or in dare-devil exhibitions. In virtue of their seemingly super-human ability, their public set them apart from ordinary men, surrounded them with a mystic halo, and in so doing, placed the airplane on a shelf alongside the worshipped. The benefits of aviation were not for the average man.

Today, the scene has changed. Although the

spectacular commands wide interest and awe, more emphasis is being placed on the practical attributes of flight. One desires figures on performance, on safety, economy and utility of flight as regards their own particular needs. Successful companies and large corporations whose personnel travel the air lines or aboard their own equipment have come to study the facts and figures and find where airplanes fit into their expedient dispatch of business. One wants to know the value and utility of an airplane.

That is why Kansas City's Dr. John D. Brock, who this month celebrates his sixth anniversary of daily flights, has achieved fame by the latter route and is valuable to aviation by dint of his practical demonstration of an airplane's utility.

A flight every day for five years, in fair weather and foul, proves something, without benefit of the glamor attending a flight from New York to Timbuktu or the imaginative appeal of a transcontinental speed dash. We might as well compare the Dole flight to Hawaii with *Pan American Clipper's* routine service flights across the Pacific. There is no doubt wherein true value to aeronautics is concerned.

And so, on the fifteenth of the month, a group of airmen and enthusiasts will gather in Oklahoma City to honor the Kansas City pilot, whose profession is the manufacture of exceptionally fine lenses, whose hobby is the demonstration of the airplane's practical utility in every day operation, an unassuming individual who wears no boots, who might be taken, if seen on the streets, as a typical successful business executive, giving no evidence of his inestimable value to his city, his state, his nation and aviation.

The happy observance of this important anniversary at best will be but a modest gesture of gratitude on the part of the industry to the Kansas City "Doctor," reflecting in no measure his true greatness and value, for that would be humanly impossible.

Atlantic Service

THE colorful development of the Pacific airway by Pan American has been stealing the show on the midway of international aviation. Spanning the Pacific has been no small job and the directors of the huge undertaking are worthy of the universal interest and acclaim already received.

Soon after the inaugural scheduled flight on November 22, the service can be expected to settle down to the point of an ordinary commercial enterprise, as prosaic and regular as the South American service is today—just another important link in the world's air transport system, with America in the lead.

During the construction and development of the route to the Far East, our progressive international air line has not neglected the proposed route to Europe. Work has been going on, silently and diligently, towards bringing the final link across the Atlantic to the stage of reality.

Establishment of the shorter Atlantic route (with the longest over-water hop of 1,825 miles compared to 2,410 miles on the Pacific) is contingent on international problems. The British control Bermuda, the Portuguese hold sway over the Azores. These problems are more or less capable of easy solution.

However, the chief factor of delay emerges from Britain's inability to produce a flying boat for the job. Imperial Airways must operate the line in conjunction with Pan American; and British pride demands that at least one British flying boat be ready for the inaugural service.

Several such aircraft are under development in England, but as yet none is in sight, even on paper, that can measure up to the Martin and Sikorsky, C. C. Grey's palaver notwithstanding.

Perhaps a solution to the delay may be found in granting English concerns the franchise to manufacture trans-oceanic equipment as has already been sighted in the granting of a license to a British concern to manufacture the Sikorsky S-42. Conquest of the Atlantic, too, is in sight.

Frontier Air Defense

ACT No. 263, written into law at the last session of Congress, and known generally as the Wilcox Bill, authorizes the erection and construction of suitable Army air bases in all strategic areas of the United States and Alaska as a fundamental step in the new air corps expansion program. However, no money was appropriated for the construction of bases at the last session.

The time is ripe for the proponents of the bill and the states and cities bidding for bases to see that the necessary appropriations are made early in the forthcoming session of Congress. Estimates place the necessary funds at approximately $110,000,000.

Modernization of the Air Corps, the re-equipment program for replacements of obsolete equipment and additional airplanes demand immediate action on the frontier air defense base program. It is hoped that plans for funds will be well along by the time Congress reconvenes.

MOTORLESS FLIGHT

A photographic record of the autumn gliding meet held at Big Meadows, Virginia, sponsored by the Soaring Society of America.

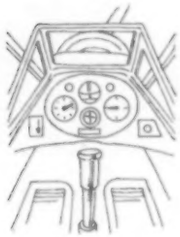
Gazing aloft from the cockpit of her Silver Bird is Miss Margeurite Kimball, the only woman participant. Floating above the tree tops is the Allure, piloted by Stanley Smith, 1933 National Soaring Champ. Below, Miss Kimball coming in for a landing and the Elmira Glider Club ship being towed skyward. Six awards were made for the various flights.

The Tragedy of The Stick

Regarding a question of the hour: Can we find a practicable plan for the widespread dissemination of primary flight instruction to American youth now beyond the reach of contemporary facilities?

By THE EDITOR

THE steady increase in the sale of low cost, light airplanes throughout 1935 evidences an upswing in student training as well as renewed activity in the sub-professional license categories. These noticeable increases have been consistent throughout the year. Student permits climb steadily on towards a new high. Flying schools report one of the best years in five.



All of this makes mighty fine reading material. Perhaps we can sit back and smile in contentment, legitimately feeling that we have passed through the doldrums of inactivity and picked up a favorable trade wind that foreshadows another boom year. Perhaps.

We might be able to feel that way about it were it not for statistics—the cold, hard figures which tell us that present holders of student permits and licenses in the lower categories represent approximately one-half of one per cent of the potential pilot timber, particularly as regards American youths between the ages of eighteen and twenty-five.

The moot question that goes begging is: "Where are these potential flyers, and why?"

The best answer to that question is that the thousands of hale and hearty prospective pilots are in the modernistic filling stations behind the gas pumps or in the chain drug stores down on the corner; or perhaps up in the skyscrapers, pushing a pencil; or in the oil fields, in warehouses, or working for father; many pursuing higher education in colleges and universities; many, never-to-be-counted, down on the farm, and all of them in the big middle of a suddenly precipitated and long continued depression.

The tragic part about them is that they sincerely want to fly. They want to get behind the stick, but can't afford it. Whether they want to fly just to take Millie or Susie for a hop on Sunday afternoons, or prepare themselves for the future day when they might afford to own and operate their own airplane, or whether they wish to carve a niche for themselves in the profession—what matters the reason?

They want to get in the air mainly for the sheer enjoyment of flying, and if you don't believe that fact, get your favorite radio station to put their announcer on the street with a mike, spot those who fulfill the age requirement and pop the question to them.

SOUTHWESTERN AVIATION has just completed a modest survey in two cities of two separate states. Here, briefly, are the results: City "A"—Population 185,000; number interviewed, 268; four had had flight experience, 207 expressed the desire to fly if they could afford it, and only 57 were not interested. City "B"—Population, 70,000; number interviewed 121; one had taken flight training, 97 enthusiastically expressed the desire to learn, and 23 had no desire.

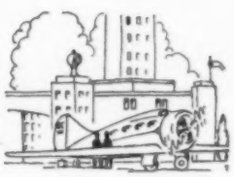
If these figures are representative of the entire United States, and we believe they are, then something ought to be done about it.

We do not maintain that an all-encompassing plan for universal adaptation can be worked out. A workable plan is not a foregone conclusion. But we do maintain that all those who profess and consider themselves interested in the aeronautical development of the United States and the wide dissemination of flight training to thousands of young men clamoring for the chance, might put their heads together and devise something definite on a philanthropic basis, even though a few tests and experiments were the only immediate outcome.

The plan would of necessity be philanthropic. Anything of a promotional nature with the "wrong people" in command (and that covers a lot of ground) would whip the idea before it got out of the cradle. But where would the support come from? The Government?

Various European governments have had the foresight and the fortitude to encourage and subsidize private aeronautics. They consider their special grants and aeronautical subsidies as investments. Germany's air force today is made up almost entirely from its civilian corps, nurtured and made possible through generous appropriations from the state. Similar are the cases of England, France, Italy and more emphatically in Soviet Russia. While these nations extend their patronage to civil aeronautics and the wide dissemination of flight training, the United States spends half-a-million dollars and two years time trying to find a fool-proof airplane.

Look to some of the bills that are typical of many introduced in the last two sessions of Congress. One would have provided for the government to share in the cost of training civilian students. Another would provide for flying instruction at land grant colleges and universities. Still another would have organized a junior air reserve. None of the bills ever got to first base. Ostensibly, the government is out.



IT IS up to private enterprise to bring the United States up to a par, commensurate with other world powers, in creating a nation of flyers — to assist in bringing thousands of active civilian pilots, whose impressive value would be a tremendous reserve for national defense.

It is further maintained that the necessary capital to initiate either an experimental or small-scale plan can be raised. Money is raised for international air races, for spectacular flights. Money is being raised to build monuments to Will Rogers and Wiley Post. Money can be raised for flight training, provided direction and supervision is in the proper hands.

Talk is cheap; and one might easily be accused of overworking the imagination while propounding an ambitious plan or searching for the open-sesame to flight training for the thousands of young Americans who want to fly. However, should a self-supporting plan be devised, could the most pessimistic honestly disagree?

For the sake of healthy argument, let us devise a plan

which originally would not be carried out on a large scale. As a test, the placement of at least one of the standard, low-cost training planes and the establishment of a base in twenty-five average cities could be attempted. The present airplane market offers safe, efficient, honest-to-goodness airplanes, far removed from the power-glider type, and low in both initial and operating costs.

Perhaps an exceptional case, but one operator writes:

"My training plane consumes four gallons of gas per hour. At eighteen cents per gallon the per hour cost is seventy-two cents. With an oil change every twenty hours, cost on this item is six and one-quarter cents per hour. I charge off one dollar per hour for depreciation. Total expense for one hour of flight instruction, therefore, averages $1.79.

"I average from one to four hours per day flying and as the average student takes time I can handle from sixty to seventy-five students conveniently. I now have sixty-two students and have had no inconvenience in handling them. Of course, as you know, they sometimes bunch up, which happens on Sundays and holidays only."

OBVIOUSLY there will have to be supervisory control, especially in the matter of choosing expert instructors whose qualifications, experience and reputation should be thoroughly approved. Capable instructors could be enlisted from the ranks of now unemployed veteran transport pilots, who have had valuable experience and proved worthy in the eyes of the Bureau of Air Commerce. The flight equipment, purchased in quantity at a reduction, could be leased to these bonded individuals on a per hour of instruction or flat monthly rental basis with all receipts allocated to insurance, reserve for depreciation, interest on the investment and other accounts as regards the sponsor's corporation, with similar distribution of the instructor's proportionate share for salary, hangar, fuel, maintenance and all operation costs. It would be entirely possible to make the project self-sustaining, even during its first year of practical application, primarily because of the now available equipment that permits heretofore undreamed of economy of operation.

The centralized organization need not be top-heavy or complicated. One well-informed executive with a few assistants could easily handle the various administrative duties. Nor would it be necessary to form any extravagant aero clubs or flight organizations which would in all probability rise up to defeat the main purpose of the project—that of offering deserving, qualified youths of limited means the highest possible type of scientific flight instruction at cost.

How about the present dispensers of flight training? They would be the first to profit from the new activity. As one commentator remarked, "Teach them how to fly and after they solo, kick them out of the nest. Then the operators of the small flying schools could get them and with a volume of business, scale down the eight to fifteen dollars per hour prices, at least to the point where every new pilot could afford one or two hours per week."

Some of our more famous airmen might be imposed upon to get about the country, selling the idea to communities, initiate instruction during the first work in each locality and insure immediate success.

Even the moral and financial support of civic organizations and prominent citizens already interested in aviation development could be enlisted. Junior and senior chambers of commerce, exchange clubs, the Rotarians and Kiwanians and the Lions in practically every community all have aviation committees. Newspapers might even become sold on the idea and lend their support. It would take a very modest sum to place twenty-five training planes in twenty-five communities to establish the proposition.

NO MATTER what the plan or whence the support, any project that would open the way for the known thousands of young hopefuls to start taking time would be the first definite effort in the United States to create and develop a nation of flyers. America, First In The Air! What a hollow sounding phrase when we check through the list of licensed airmen! Millions of dollars for the construction and maintenance of airports and facilities that welcome capacity utilization, but not one cent for training. And the anticipated boom in private aeronautics is long over-due.

New money is what we seek, even if it comes at first in small quantities. Any inducement offered American youth now beyond the reach of present facilities would not only be enthusiastically accepted, but start the ball rolling down hill. Any well thought-out, legitimate and workable plan would provide the initial "push" and uncover new money. It would tap a wealthy reservoir that would bear substantial fruit in future years.

True, the average youth would be of limited means, but in the aggregate, the spendings of thousands of these fifteen-to-thirty dollar a week young hopefuls would make current expenditures for primary flight training a mere drop in the aeronautical bucket.

Finally, to reflect a moment upon the possible results from a far reaching plan of disseminating flight training is a bit overwhelming. It would contribute to employment; it would establish new and fertile markets, new fields of endeavor; it would create the nucleus of a tremendous air reserve for national defense; it would be a source of clean and wholesome pleasure with extensive moral benefits, providing a new common-ground for youth; it would answer in part the problem of the growing leisure, forced upon us by the new economic order; it would form the essential background of a phase of the aviation industry which needs quite badly a stimulus at this state of development; it would mean greater accomplishments in technical advancement in the light plane equipment field as has been experienced in the realm of scheduled air transport. Perhaps it might even grow and prosper to the point of contributing generally to prosperity and the national wealth as did the predecessor eras of water, rail and highway transportation.

Something can be done about it; and it's up to aviation's present population to go to work, minus of course the aid and assistance of that insignificant minority who for their own selfish reasons, are opposed to widespread private flight activity.

With our nation's airports taken from the graveyard category and transformed into fields of renewed activity in private flying, we might hope for volume production of airplanes, engines and accessories to satisfy the inevitable demand that would increase in direct proportion to the economic rehabilitation of the country. The new activity must come from those who want to fly and will take to the air if, as and when they can include non-professional flying in their limited budgets.

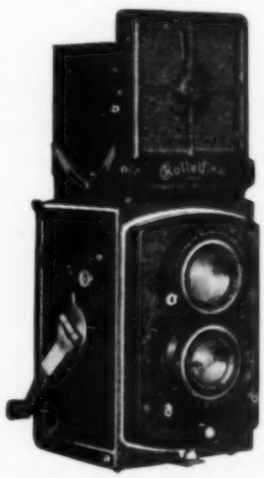
Clicks From The Clouds

Part Two

By LARRY J. FISHER

FAIRCHILD'S CYCLOPS
Inexpensive to operate and requires but little photo experience to produce good pictures.

IF YOU find yourself interested, after reading last month's article on aerial photography, why not dig down and buy one of the big aerial cameras which sell for $12,000? Too much? Well, I've seen some unusually fine shots made with a low priced camera. It is impossible to cover the many brands of cameras within the limitations of space given us, so we well confine ourselves to brief descriptions and operating technique for several cameras with which we have had experience.



Left: The National Graflex Right: The Rolleiflex These two fill the gap between the miniature and large size equipment.

Fairchild Aerial Camera Corporation has specialized in cameras for the air since 1918; their equipment is known the world over, but until recently prices were prohibitive for the individual small airport operator. Realizing that lack of capital prevented the average pilot from taking up aerial photography, Fairchild recently produced a low-priced camera which incorporates the best features of the more expensive equipment.

This camera is the Cyclops, selling for about $300, which is inexpensive to operate and requires but little photographic experience in order to produce good pictures. It has a F:4.5 lens and the focal plane shutter speeds range from 1/50 of a second to 1/200. The Cyclops takes 5x7 pictures and uses cut film, film packs or plates, which may always be purchased locally and which require no special developing. Pictures may be taken as close as eight feet (for ground work, of course—the Department of Commerce would consider flying this close to your subject inadvisable) to infinity.

We might as well stop right here and get a little bit technical; but not too technical, for you can find many good books on the subject of photography at your public library. We're not even going to explain what the F in front of the lens number stands for but, other things being equal, the smaller the lens number, the better the lens. Thus an F:2 is approximately five times faster than an F:4.5. Any lens with a larger number than F:4.5 would generally be considered unsatisfactory for air work, although good pictures have occasionally been taken with an F:6.3. You will find this number engraved on the lens holder. The other number on the lens holder corresponds to the focal length of the camera. In order to secure large images of smaller objects from the low altitudes and yet secure wide coverage of large areas from slightly higher altitudes, a focal length of between eight and twelve inches is considered desirable.

The next important thing to look for in the camera is its shutter speed. There are two different types of shutters in general use—the focal plane or curtain type and the between-the-lens type; both types have been developed to the point where one is as good as the other as far as the aerial photographer is concerned. But the shutter (the device that momentarily admits the light to the film, thereby taking the picture) should have a speed range of from 1/50 to 1/200, although speeds up to 1/500 are desirable in some cases.

The third element in which we are interested is the "stop," an adjustable iris diaphragm which provides various lens openings. Let's take an F:4.5 lens for example. With the diaphragm wide open, the lens opening would be F:4.5 and the pictures shot "wide open" require the subject to be in exact focus. By stopping the lens down to F:6.3 subjects not quite in exact range will be at focus and so on down the line of F numbers. The more the lens is stopped down, the greater the sharpness of focus. It seems that the logical thing to do would be to stop the lens down to an extremely small opening. The catch to this, though, is that the greater the lens is stopped down, the less the amount of light that is admitted to the film; consequently, the longer the exposure that must be given.

THIS does not greatly concern us, however, in aerial work. In practice, the lens is set at infinity; on most cameras anything beyond 200 feet is infinity and the majority of aerial shots are taken at a greater distance than that. By setting the lens at its infinity adjustment and the opening at F:6.3, the necessary sharpness will be provided without unduly increasing the exposure.

Repeating then, the important things to look for in your aerial camera are a lens speed of at least F:4.5, shutter speeds of 1/50 to 1/200 and an adjustable diaphragm for the lens. The proper utilization of these three elements will be discussed further along.

The film holder is also of great importance to the purchaser of an aerial camera. As little as 1/5,000 of an

inch movement of the film will cause a detectable loss in sharpness. For this reason, some operators prefer plates to films, although they have the disadvantage of bulkiness of storage and possibility of breakage. Roll film is used occasionally but film packs are especially popular for the films already exposed may be taken out and developed without ruining the balance of the unexposed film remaining in the camera. Cut film is used in individual holders and handled in the same manner as plates and does not have the disadvantages of the plates. On all the cameras described here, the film holder, whatever type it may be, has been proven satisfactory for oblique shots for the average operator.

BACK to our discussion of cameras, we come next to the old standby of the press photographers—the products of the Folmer Graflex Corporation: The Graflex, the Speed Graphic and the new National Graflex. These cameras range in price from $82.50 on up to $500, depending on the size and the lens equipment. Speaking of size, bear in mind that many aerial shots are later enlarged and that the larger the original picture, the better the enlargement that can be made from it.

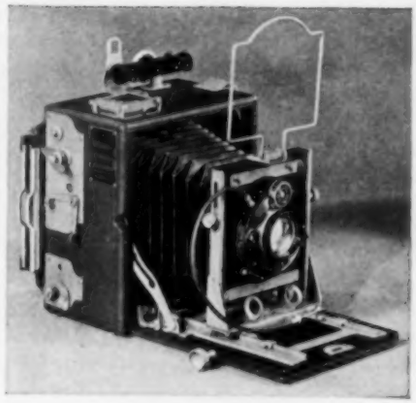
The Speed Graphic has been used for aerial photography but the exposed bellows is likely to cause the lens board to vibrate when the camera is held in the slipstream of an open cockpit. This vibration would cause a blur in the picture. The short bellows of the Graflex eliminates this trouble to a great extent and for that reason the Graflex, in my opinion, is preferable. The Graphic has a direct view finder that is handy because the desired shot can be "spotted" very easily with it. On the other hand, the ground glass of the Graflex gives a view of the picture, right side up, just as it will appear on the film and is very useful for ground shot composition. A direct view finder can be purchased for about two dollars and attached to the top of the Graflex; in the air, the ground glass need not be used at all and the top of the camera may be left in its closed position. The direct view finder, mounted on top, will outline the shot you want to get.

The Series D Graflex. Its focusing hood reflects a full picture size image of the subject.

The little lens door on the Graflex Series B may be taken off by removing the screws, so that it will not bang in the slipstream. It might be well, also, to drill a hole in the bellows track and insert some sort of pin or screw to hold the lens at infinity. Infinity is determined by focusing on some object over 200 feet away, setting the camera at the point where the image appears ot be sharply defined on the ground glass, with the lens wide open.

The Graflex may be purchased with F:2.5, F:3.5 and F:4.5 lenses, prices varying with the make and quality of the lens. The shutter speeds of the Graphic and the Graflex are from 1/10 to 1/1,000 as well as settings for time exposures. These speeds will stop practically anything that moves.

The National Graflex is a small version of its famous big brother and, while I have never tried any air shots with one of them, it should work as well as the larger ones. It has an F:3.5 lens, its focal plane shutter speeds range from 1/30 to 1/500 and it takes ten pictures on an eight - picture roll of film. A special device holds the roll film taunt for each exposure. Its very moderate price of $82.50 will appeal to you. A direct view finder is a standard accessory for this camera.



THE SPEED GRAPHIC
Finds universal use by newspaper photographers.

Another camera designed especially for aerial work is the Skyview. The F:4.5 Wollensak lens has a built-in aero filter, which is a useful feature, and the camera has an adequate range of shutter speeds. It uses a 3¼ by 4¼ film pack of twelve exposures and weighs a trifle over three pounds. The finder is part of the camera and gives a large, brilliant image of the object. The Skyview is supplied complete with a carrying case, which contains room for extra film packs, at a price of less than $200.

Several reliable firms handle second-hand cameras and will inform you honestly of the condition of them. Central Camera Company, Burke and James, and Henry Herbert are a few that might be mentioned.

But for heaven's sake, if you don't know anything about cameras, don't run in some pawn shop to pick up a "bargain" in a used outfit. Take some one with you who does know something about it—otherwise, you may get gypped in fine fashion.

DISCUSSING cameras is like arguing about automobiles—everyone has their pet picture box and opinions vary widely. Most violent of all the camera enthusiasts' arguments is the case of the standard, large-size cameras versus the miniature cameras. By using fine grain film, tremendous enlargements are possible from the miniature camera's negatives. I took a little Kodak Retina ($57.50) up the other day and, despite the fact that it was nearly sunset and that it was rather hazy, I got an air shot which "blew up" (photographer's slang for "enlarged") splendidly. So, perhaps there is something in the miniature camera advocates' argument after all. It's worth experimenting with, at any rate, for a roll of film, taking 36 exposures, costs only 85 cents. In cameras of the miniature class we find many others, including the Rolleiflex, the Leica and the Contax, finest of this type made and considerably more expensive than the Retina.

In films there are a confusing number of varieties but this is something you will have to decide on yourself. A little experimenting will determine the film you like best; decide and then stick to that particular emulsion, so that your results, as far as the film is concerned, will always be the same. A

THE BIG SHOTS OF THE LITTLE CAMERAS
The Leica and the Contax, whose lens equipment is so "fast" it is almost possible to snap a black cat in the dark!

booklet, obtainable free I believe, from the Eastman Kodak Company covers this subject thoroughly. It is called "Films, Plates and Filters for Commercial Photography." Fairchild recommends Superspeed Panchromatic for their Cyclops because this emulsion gives extreme speed and complete color correction. Eastman verichrome film greatly increases the range of conditions under which the camera may be successfully operated and the Eastman Panatomic is especially suitable for enlargements. AGFA and Geavaert put out similar films under various typenames. Plates are available in a wide variety of emulsions also.

We quote again from the Fairchild bulletin mentioned last month. This time the subject is filters:

"In aerial photography the distance between the object and the camera usually is considerable so that between them there is a haze consisting of water or dust particles which reflect light back into the lens. This reflected light superimposes a uniform illumination over the subject, which diminishes the contrast available for reproduction. Light of short wave lengths is more strongly reflected by these particles than is light of longer wave lengths and the effect of this haze can be eliminated partially by the use of filters which filter out the shorter wave lengths of light so that only the less reflected long wave lengths actually reach the film emulsion. Either gelatin wafers inserted between the lens elements or optically flat glass filters can be used. The latter type is more desirable because of better optical qualities and freedom from distortion due to wrinkling. Generally speaking, the use of at least an Aero One density filter on short range oblique work is advisable, light conditions permitting, because it reduces the effect of haze in the background and imparts a better tone to the picture." You will find the subject of filters well covered in the Eastman booklet previously mentioned.

WE COME finally to operating technique or "shooting the picture." Fairchild Aerial Camera Corporation has had a great deal more experience at this than the writer, so we turn the microphone over to them:

"Since aerial photography is affected by so many varying factors it is almost impossible to set down a table of the various lens apertures, filter densities, and shutter speeds which should be used. Good aerial photographs are secured through a technique which is best acquired by taking a series of experimental shots, noting the various settings used for each and then studying the resultant prints to determine what settings should be changed to improve the results. This technique should be acquired in less than two dozen experimental shots if the operator goes about it in a painstaking manner.

"In aerial photography all possible precautions should be taken to guard against apparent motion and vibration. On all shots taken at altitudes below 1,500 feet, the approach to the object should be made in such a manner that the plane is either approaching or receding from the object on a direct line at the moment the shutter is tripped rather than passing by on a line almost parallel to the front of the object. Furthermore, the engine should be throttled back so that the plane is preferably in a mild glide (but not at stalling speed) at the moment of exposure. This practice will not only help to reduce the effect of apparent motion, but will also reduce considerably the vibration within the fuselage. Furthermore, the camera should be held firmly, free from all parts of the plane, and the photographer should make sure that his body, from the waist up, is not in contact with any part of the plane.

"At the outset, the commercial aircraft operator will do well to follow a definite procedure in selecting and making the various adjustments. Generally speaking, the shutter speed should be selected according to apparent motion, involving proximity to the object and speed of plane at moment of exposure. Shutter speed should be just fast enough to prevent motion of images across the negative during the exposure period causing serious distortion. For instance, with the proper approach as treated previously, a shutter speed of 1/155 should prove adequate from altitudes of 500 feet, 1/140 from altitudes between 600 and 1,000 feet and 1/125 from altitudes over 1,000 feet. It should be remembered that these speeds are predicated upon the proper approach for minimum apparent motion in oblique work. Having selected the minimum shutter speed in keeping with relative motion, it is now necessary to adjust the lens aperture is, the greater is the overall sharpness of the intensity and filter densities. Fundamentally, the smaller lens field. Consequently, it behooves the aerial photographer to stop down the lens as much as possible in keeping with the shutter speed and filter density in order to secure the sharpest possible negative.

"Before taking a shot, cruise around the object and study it carefully from all angles. Determine the light and shadow effects as they will be recorded on the negative. In determining composition, consider the outstanding features of the subject and how they can be emphasized most effectively. Include in the background only such objects as will give a pleasing effect and avoid shooting into the sun whenever possible because of the hazy background which is usually produced. If the approach does not permit the composition you want, pass it up and try again until you can get precisely what you want.

"At the outset it is advisable to achieve some working arrangement with a commercial photographer who will develop your films and make your prints and enlargements. He can develop your films and aid you materially in the selection of papers and finishes in exchange for a flat rate or a percentage of income. Negatives from which enlargements will be made ultimately should be developed in a fine grain developer. The commercial photographer can help materially in sales solicitation and development. Above all, don't be a price cutter and don't attempt to sell inferior work."

IN CONCLUSION, we would like to emphasize two points brought out in the Fairchild excerpt: First, tie-in with some good commercial photographer. He will be a big help to you and can readily tell you "what's wrong with the picture." Don't leave your film at the corner

(Continued on Page 32)

WASHINGTON

HARRIS B. HULL

Trans-Pacific Mail

THE first air mail to be flown across the Pacific ocean will start out on the long over water trek Friday morning, November 22.

A new air mail postage stamp of 25 cent denomination will be issued by postal officials for use on the trans-oceanic run. The rate will be 25 cents to Hawaii, 50 cents to Guam and 75 cents to the Philippines.

Postmaster General Farley's announcement on Oct. 26 that the ocean service is ready to be inaugurated came only two days after the bid of Pan American Airways to fly the route had been accepted by government officials.

Offering to do the job for the maximum payment allowed under the law, $2 a mile for the specified load of 800 pounds and $1 per 1,000 miles for each additional pound of mail carried, Pan Air was revealed as the only bidder when on Oct. 21 Postmaster General Farley called for the little sealed envelopes.

Farley made aviation history in his ornate office in the new Post Office Department building as he looked over the one offer to fly the 8,700 mile trans Oceanic route.

With an entirely frozen expression he posed for the photographers then offered his congratulations to Juan Trippe, president of Pan American.

"It is my fond hope that it will be a very short time before we are opening bids on a trans-Atlantic service," the Postmaster General stated.

Three days later the President returned from his cruise, looked over the Pan American offer and passed it along to a special committee of departmental experts who in turn placed their O. K. on the proposal. That night Farley stated definitely that the contract would be awarded.

Pan American's offer to inaugurate service to China was subjected to the most minute investigation by the special committee.

Among others, the following sat in on the session called by Farley to determine if the offer was in order in every detail

Secretary of State Hull, Attorney General Cummings, Secretary of Commerce Roper, Assistant Secretary of Commerce Johnson; Acting Secretary of War Woodring; Capt. B. L. Canage of the Navy Department; Eugene L. Vidal, director of Air Commerce; The Second Assistant Postmaster General, Harllee Branch; Capt. J. L. Stromme of the War Department; Solicitor South Trimble of the Department of Commerce; Karl Crowley, Solicitor of the Post Office Department and John Lamiell, director of the Division of International Postal Service.

The new stamp to be used on trans-Pacific mail is to be arranged horizontally and printed in blue ink. It will conform in size to the current special delivery stamp.

Across the top will be the inscription, "Trans-Pacific Air Mail," and immediately beneath will be printed "1935." The central design will depict the sun rising from the shores of America while a model seaplane appears over the water. In the upper left hand corner will be the U. S. shield and in the upper right hand corner the shield of the Philippine Islands. On the lower right side of the stamp is a reproduction of a portion of a modern ocean liner while on the left is a Chinese junk vessel.

On the water in the distance is a three masted sailing vessel, also a reproduction of a ship of the mid-nineteenth century period.

About the only thing not reproduced on this little stamp is an original Michael Angelo superimposed on a scale drawing of the Graf Zeppelin as the airship flies over Honolulu.

One of the first of the Sikorsky "Clippers" already has pioneered the greater part of the route. This plane has been flown on clock-like regularity from California to Honolulu, a distance of 2410 miles; on to Midway, 1,380 miles; to Wake, 1,260 miles more and to Guam 1,500 miles farther west. This leaves only two comparatively simple hops remaining, Guam to Manila and Manila to China.

It is believed that the new Martin "China Clipper" will be used on the inaugural ocean crossing. This four-engined 25 ton flying boat made its first passenger flight from the Glenn Martin plant at Middle River, Md. on Oct. 9, a trip in which this correspondent was privileged to participate.

FLYING in the biggest airplane ever built in this country offers something new in aviation experience. With Capt. Edwin Musick at the controls the ship made an entirely effortless take-off in exactly one minute.

The "China Clipper has a useful load for ocean Service of 22,784 pounds. She has a wing of 130 feet, an overall length of 89½ feet and height of 24 feet.

Four geared and supercharged double row Wasps develop 800 horsepower each. Hamilton three-blade constant speed propellers equipped with brakes are used.

The power loading is 16 pounds per horsepower and the wing loading is 22 pounds per square foot. The plane can accomodate 43 passengers, cargo and a crew of seven on a 1,250 mile typical South American flight. Reducing the passenger and cargo load and increasing the gas capacity will make it possible to fly as far as 4,000 miles as a mail transport and 3,000 miles as a passenger mail transport. This is far in excess of the maximum range needed in the Pacific of 2,410 miles between California and Hawaii and the max-

imum Atlantic flight of 1,824 miles between Bermuda and the Azores.

The "China Clipper" has a service ceiling of 20,000 feet, a top speed of 179 miles and a cruising speed of 157. With this performance she undoubtedly will hang up a series of new world's records for big boats.

Flying in the China Clipper is not very different from flying in a Sikorsky or a Commodore boat. The plane is luxuriously appointed in every respect. Hot and cold running water and comfortable berths are only part of the plane's facilities.

When the inaugural flight was made the ship was not as quiet as she might have been. Sperry engineers still are trying to improve this feature.

A passenger appreciates the plane's tremendous size when she is brought in for a landing, and the 25 tons of airplane are set down on the water. That experience provided the only thing remotely resembling a thrill on the first flight. The course of the first flight was from Baltimore to Washington and return.

Two Martin sister ships to the "China Clipper" will be delivered to Pan American within the next three weeks.

As Martin engineers turned out the first of the 25 ton Clippers they announced completion of plans for a 50 ton flying boat. Four Diesels developing 1,500 horsepower each would furnish the power. The span of the proposed airplane is 180 feet.

AND as the "China Clipper" flew to Miami where she went through ocean flying tests over the Carribean, Pan American officials in New York announced a speeding up of all South American schedules approximately 20%.

The faster schedules will average 150 miles an hour and are effective November 1. Use of Douglas planes on overland flights and new "Clippers" on long over-water runs to the east coast ports makes the new schedule possible. Thirty planes are involved in the new equipment program.

Air mail time to Buenos Aires will be slashed to five and one-half days as compared with nine and one-half days when the service was inaugurated.

Puerto Rico, Jamaica and Guatemala will be brought within 24 hours of Washington and seven other countries will be within one travel day of continental United States.

All the countries as far South as the Panama Canal, coastal Colombia and Venezuela will be within 48 hours of Washington. The Guianas and the Amazon region, Pacific Colombia and Ecuador will be within 72 hours of the Capital.

Lima, Peru, and the important coastal cities of Brazil as far South as Natal will be four days flying time from Washington. And southern Peru, central Chile as far as Santiago, Rio de Janeiro, Brazil will be five days away. Air mail to southern Brazil, Uruguay, Argentina will be delivered five and one-half days after leaving any principal point in the United States east of the Mississippi.

PAN AMERICAN'S "CHINA CLIPPER" IS NOW READY FOR PACIFIC SERVICE
As Martin engineers turned out the first of the 25-ton clippers they announced completion of plans for a 50-ton flying boat to be powered with four Diesels developing 1,500 horsepower each.

Visitors From The South

THE visit of a group of civil aviation officials from Latin America featured the Washington observance of Air Navigation week.

In addition to the visitors from the South, J. A. Wilson, controller of Civil Aviation of Canada, came to town to represent his government in the celebration.

The group arrived in Washington Sunday night, Oct. 13. They flew north as the guests of Pan American Airways and to the Capital on Eastern Air Lines and American Airlines planes.

Secretary Roper and Eugene Vidal of the Department of Commerce received them on Monday morning, after which they inspected the central offices of the Bureau of Air Commerce and interviewed heads of the various divisions. "Saftey in the Federal Skyways," a little two-reeler made up by the photographers of the Bureau of Air Commerce, was projected for the visitors to give them an idea of what they might expect to see during their stay in this country.

On Tuesday they heard their old friend Jimmy Doolittle give a talk at the Pan American Union on international aviation as an instrument of good-will among nations. Later they called at the Weather Bureau and were received by Willis Gregg, chief. Here they say the control offices of the forecasting and weather disseminating machinery.

Officers at the Naval Air Station at Anacostia played hosts on Wednesday, showing the visitors Navy service and experimental planes. Later that day they were flown in

A SIGNIFICANT VISIT FROM LATIN-AMERICAN LEADERS DURING AIR NAVIGATION WEEK IN WASHINGTON

Representatives were sent from Bolivia, Uruguay, Mexico, Argentina, Brazil, Peru, Cuba, Chile, and El Salvador. They are shown above at Anacostia Naval Air Station, where they were given a flight in a Navy transport. They flew to Langley Field, where they witnessed a flying demonstration by the G H Q and later visited airplane manufacturing plants, the Bureau of Air Commerce, the N.A.C.A., the Weather Bureau, and were given a night flight over a lighted airway between New York and Chicago.

two of the Navy's Douglas transports to Langley, where the G. H. Q. Air Force put on a special flying demonstration.

While at Langley the officials were tendered a luncheon by the National Advisory Committee for Aeronautics.

Later the laboratories were opened up for inspection.

That night the Aeronautical Chamber of Commerce gave a dinner at the Mayflower in Washington attended by aviation leaders and government officials.

During this event a number of the officials delivered their speeches in their native languages. One of the men concluded a long discussion, none of which was understood by anyone present, and as he finished called upon a friend to make a brief translation.

The friend from the neighboring republic heard only his own name mentioned, rose to his feet and delivered a thirty-minute oration of his own in another language. This provided the only untoward incident of the evening. Leighton Rogers, head of the Aeronautical Chamber, presided at the big dinner.

Thursday the visiting delegates left Washington for a tour of inspection of the Glenn Martin plant in Baltimore and other factories and fields in the New York area.

While in the metropolis they were tendered a luncheon by Mayor LaGuardia. During his speech of welcome, His Honor the Mayor stated that he knew that the South Americans couldn't understand what he was talking about and thus he felt they became immediately eligible to serve on the Board of Aldermen of New York City.

While in New York the visitors were given a dinner by Juan Trippe, president of Pan American Airways.

The aviation leaders flew over the New York to Chicago lighted airway on a special night flight in a TWA Douglas and were entertained in the Windy City. They disbanded at this point, returning leisurely to their various countries via domestic air lines and Pan American Airways.

The officials coming to this country for the observance of Air Navigation Week included: Juan Rivero T., chief of Railways and Air Transport of Bolivia; Francisco Mendes Goncalves, director of Civil Aeronautics of Argentina; Cesar Grillo, director of Civil Aeronautics of Brazil; Horacio Olivares, director of Aeronautics of Chile; Augustin Parla, inspector general of airports of Cuba; Capt. Juan Ramos Munes, chief of the Salvador Army Air Corps and chief of civil aviation; Lieut. Col. Luis Farell, assistant chief of the Civil Aviation Department of the Department of Communications of Mexico; Frederico Recavarren, inspector general of aviation of Peru; Luis Felipe Marques, director of Civil Aviation of Uruguay.

The invitation to visit this country was tendered to the South Americans by Secretary of State Hull on behalf of the National Aeronautic Association, sponsors of Air Navigation Week.

New Craft for the Coast Guard

OFFICIALS at Coast Guard headquarters have announced the completion of the first six of a fleet of new amphibians to be stationed at various points along the Atlantic and Pacific coasts.

Manufactured by Grumman, the planes will be flown from the factory at Farmingdale, N. Y., to Port Angeles, Wash.; St. Petersburg, Fla.; Salem, Mass.; Cape May, N. J., and San Diego, Calif. Lieut Clarence Edge, new commanding officer at the Port Angeles base took delivery on the first ship and flew it to his station.

The Grumman is a rugged type of single-engined amphibian well adapted for Coast Guard rescue and patrol

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Off Course

Cocktails or Coffee?

American Airlines made history and stirred up wide interest last month when Satevepost came out with the page ad, "Shall we serve cocktails to passengers?"

Similar to American's slogan campaign which brought in over 160,000 slogans, the cocktail question is aimed primarily to attract the attention and interest of the non-flying audience.

In the words of American's adman Willis: "Our broader sales job is to sell the people who are not now flying. A person who is now a regular flyer is interested in an advertisement in schedules, fares, faster planes, etc. But such an advertisement is not apt to interest the non-flyer —any more than an advertisement on how to grow hair would interest you if you were not bald-headed.

"It is as safe to fly in a nightgown as in an overcoat, because the safety of an airline is not dependent upon whether a passenger has his shoes on or off, or whether he has on britches or pajamas. Now by the same process of reasoning, we wonder if our patrons would also enjoy the privilege of a high-ball or cocktail on a plane, the same as they do in boats or trains. Because, so far as safety in air transportation is concerned, it does not make air travel any safer or any more unsafe whether the passenger has a cocktail or a cup of coffee. Some of our patrons have requested us to increase our service to include this privilege, a privilege which they say they are accustomed to receive in fine trains and fine boats. We are neither for liquor being served, nor against it. We simply want to do the thing our patrons want."

Bailing Out for Science

From the American Medical Association Journal comes a report on the "subjective mental and physical reactions to a free fall from space," prepared by Captain H. G. Armstrong, director of the Air Corps' Physiological Research Laboratory at Wright Field, Dayton. Often a passenger, Armstrong is not a pilot. However, he made a recent parachute jump from 2,200 feet, falling 1,200 feet before pulling the ripcord, in order to determine reactionary phenomena of the fall.

Said Armstrong: "Throughout the free fall, all conscious mental processes seemed normal. As soon as the airplane was cleared, fear and excitement disappeared."

He explained that ordinary hearing was unimpaired, visual perception was normal, and that there was nothing of the empty or "gone" feeling in the abdomen.

Reporting a horizontal velocity of about 175 feet per second for the first second of the fall, he described the tumbling motion of the body as making a complete revolution in about two seconds, that the sensation was that of being suspended in mid-air while his eyes were closed during the first part of the fall.

"When the eyes were opened, which was at an altitude of about 1,900 feet, there was for the first time a definite sensation of falling," he writes. Increasing rapidly, the phenomenon "lends strong support to the recent theory that the eye and not the ear is the predominant organ in determining spatial position and relationships."

"The nearest possible similar earthly experience is that of being lowered slowly into a great bed of softest down."

Dirge of the Air Line Operator

Words by Temple Bowen
Illustrations by Hugh Smith
Musical Score by Paul Braniff

PISTONS AND RINGS . . .
SCHEDULE AND FARE . . .
GADGETS AND THINGS . . .
I'M TEARING MY HAIR . . .

CYLINDERS . . WRIST PINS .
AILERON . . . FLAP . . .
CUT RATE . . VERTICAL FIN .
MY CHIN'S IN MY LAP . . .

DEAD HEAD MILEAGE . . .
OVERCAST . . . HAZY . .
INTERSTATE COMMERCE . .
I'M GOIN' CRAZY . . . .

INSURANCE . . . PAYROLL .
FLAT TIRE . . . COIL . . .
TAKE OFFS . . MOTOR COLD .
ALTITUDE . . . OIL . . .
SPARK PLUGS . . INTERLINE .
PASSENGER RATE CUTS . . .
COWLING . . . ON TIME . .
JEES! I'M NUTS . . . . .

HEPTANE . . . OCTANE . .
TAKE-OFF AND CLIMB . . .
CANCEL OUT . . ENTRAIN .
OUT OF MY MIND . . . .

THRU FARE . . . TAIL WHEEL .
SECOND HAND CLOCK . . .
LANDING GEAR FAILURE . .
REFUND . . . SOCK . . .
LOAD FACTOR . . SHIELDING .
AERIAL DRAGGIN . . . .
BUG HOUSE FOR ME . . . .
HERE COMES THE WAGON . .

Lesson From a Hawk

Not long ago a Washington gliding enthusiast by the name of Cloyd Artman took off from the new Wenatchee soaring site. In an account of his survey flight over the new site he reported: "Just around the corner I found a pocket that gave a very strong current. After a bit I saw a hawk coming up and (one of my weaknesses) I started after him. He was also soaring in this same current and (he is the first hawk to do so) he allowed me to reach a position about twenty feet from him and directly behind him. I watched him closely and noticed each time he zoomed a little. I waited until that gust had time to hit me and zoomed also. Believe it or not—I gained steadily along with him and he would turn his head and look over and then under his wing at me. In the minute I followed him I gained 300 feet and gained 1,100 feet above the take-off point at that pocket—using what I had learned from the hawk to good advantage."

FLORIDA PREPARES

An air-wise state turns forests and swamps into havens for flyers . . . airports will average one to every 20 miles along her modern airways.

By EDWARD BENTLEY and R. E. BURRITT

WHEN sportsmen pilots and air travelers from the snow-bound north fly south this winter to bask in Florida's sunshine, they are due to be impresed with the airport facilities that await them, especially if they have flown into the sunshine state during past years and have a means of comparison with which to gauge the magnificent improvements now at their disposal. For Florida's Ten-Year Plan of aviation development is well under way, and the fruits of its rapid progress may now be seen in every section of the peninsula.

THE PERSONALITIES BEHIND FLORIDA'S DEVELOPMENT PROGRAM:

Above: Major A. B. McMullen, state director of aviation, whose ten-year plan is well under way.

Right: Florida's air-wise Governor, Dave Sholtz.

It all began when Florida's new chief executive, Governor Dave Sholtz, took the oath of office and immediately appointed a State Director of Aviation; fortunately for the state and for aviation, the man chosen for the job was Major A. B. McMullen.

The Major went to work at once, first to organize an efficient staff for a complete survey of facilities available in order to equitably distribute appropriations from the legislature to the best advantage. Soon, the data was compiled, a comprehensive air map of the state was published and work begun.

With the preliminary tasks well under way, Major McMullen and his able assistant, W. G. Stewart, began work in earnest on the Ten-Year Plan—a plan that would fill a book—and literally did; for a volume, eight by eleven inches soon appeared, comprising sixty-one pages of detailed information on the program. The twelve divisions of the program include airports; airport beautification; air-marking; hangars, shops, etc.; lighted airways; aviation radio; air education; scheduled airlines; air transportation; administration; aerial photography; upper air observation station.

Let us quote in part from Major McMullen's plan:

"As the tourist business in Florida produces one of the largest sources of revenue in the State, every possible means should be used to increase the number of tourists who visit Florida each year to escape the rigors of a northern winter. The use of the present day airplane permits the tourist or business man to travel from Chicago or New York to Florida in five or six hours time. With the rapid improvement that is being made every year in the dependability and speed of airplanes, with an airport in every town, city and community in the State, with lighted airways, aviation radio, and with improving economic conditions, we may reasonably expect to see in the near future thousands of people who have never flown before traveling to Florida on regular scheduled airlines and in their own planes, provided, of course, that we have made it attractive and easy for them to do so.

"Our airports should be landscaped and beautified in every way possible, for it is not hard to imagine the reaction of a northern visitor who, four or five hours after having stepped from a frozen snow-covered airport into a plane, steps out again on to a beautiful Florida airport, green with grass, surrounded by flowers, palms, and shrubs and basked in sunshine. What better way could possibly be used to forcibly impress on our visitors the contrast between Florida and the northern states during the winter months?

"It is an acknowledged fact that not only in Florida but throughout the entire world the development of airplanes and aviation facilities has advanced much faster than the public interest and confidence in flying. Therefore, it is necessary that every possible means be used to educate the general public regarding safety and convenience of the modern airplane and encourage large numbers of people to fly."

RANKING in importance with the construction of airways and airports to facilitate scheduled airline operations is the construction, complete in every detail, of airways for the use of tourist and sportsmen pilots. Every point of interest and tourist center in the state will be connected by airways and each will have a first class airport located so that the pilot and passengers may reach their

destination on the ground with a minimum amount of effort.

For example, several well-known golf courses have been altered to accomodate the landing and take-off of private flyer equipment; others have airports actually within walking distance. A notable example is the Mount Plymouth Airport where one runway extends to the front door of the large hotel! A golf course, swimming pool, bridle path and club house all adjoin the field. Good hunting and fresh water fishing are within a stone's throw of this center of activity.

Guests of a large hotel in Bellair, near Clearwater, can taxi within a short distance of the hotel. Miami has a large number of airports which make all the charms of that seaboard city accessible to the private owner. The international combination seaplane and land base on the south end of Davis Island in Hillsboro Bay is entirely within the city limits of Tampa and less than two and one-half miles to the center of town. The Davis Island County Club and golf course are adjacent to the airport and several first class hotels on the islands are within half a mile of the terminal building, now nearing completion and a model of modern construction which affords every convenience to the airplane owner.

The Albert Whitted Airport, or "downtown" airport of St. Petersburg, is probably nearer to the business center than any other landing field in any city of the United States. It is just four blocks from the main thorofare and six blocks from the main post office. It has two seaplane ramps facing the Gulf of Mexico, one of which is utilized as a Coast Guard base. National Airlines System makes this airport its western terminal and base of operations. The longest runway is thirty-three hundred feet. During winter months the Goodyear Company base their blimp "Resolute" at this field in the well-equipped hangar.

LET US take one typical example of what has been done is scores of cases within the state's borders. Lakeland's recently dedicated half-million dollar airport, which literally sprang from a forest in fifteen months, classically examplifies the work and cooperation of Florida's citizens under intelligent supervision and leadership.

In November, 1933, Ed R. Bentley, then head of the CWA advisory council, approached city officials with a proposition to build an airport on a 186-acre tract of land about two miles north of Lakeland. The tract bordered on 2,500 feet of Lake Parker, one of the largest bodies of fresh water in that territory. The land was a veritable wilderness, part of it being sandy highlands covered with scrub oaks and pines and the remaining portions a swamp covered with tropical undergrowth and bay trees.

During the Florida "boom" days, the tract had been laid out as a subdivision and was cut up into more than 1,500 building lots. It was never developed although streets had been marked off. Eleven houses stood on the high land. Many of the lots had been sold to people who are now far removed from Lakeland. The gigantic task of contacting these people and acquiring the land fell on the shoulders of city attorney Carver and city manager Larsen.

But complete ownership of the tract was finally acquired, the houses moved and work begun. The project is now finished except for the completion of an eighteen plane hangar. There are eight-way runways on the field with clear and unobstructed approaches from all points of the compass. In addition to the paved runways 300 feet wide running N-S and E-W, two additional runways NE-SW and NW-SE have been set out with Bermuda grass. A total of 4,000 feet of sub-tropical shrubbery has been planted along the parkway and drives as a beautification project.

A large seaplane ramp was constructed at the east end of the port, running down to Lake Parker and affording water craft a sheltered terminal. An underground fueling system, a complete lighting system consisting of a beacon, flood lights and boundary lights has been installed. A short wave receiving set for weather bulletins is in constant operation as well as teletype equipment.

LAKELAND is but one case out of many. Its civic pride and reawakened interest in aeronautical development are paralleled by scores of other Florida towns and cities. At present there are one hundred and thirty well equipped airports connecting approximately twenty-five hundred miles of airways, which will give an average of

BEFORE

A 186-acre tract of sandy, wooded land, bordering 2,500 feet along one of the largest bodies of fresh water in the State, proved an ideal site for Lakeland's ultra-modern airport.

approximately one to every twenty miles.

Florida is the Utopia of the float equipped plane, the flying boat and the amphibian. There are more than thirty-five thousand lakes in the state, more than five thousand of which are now accessible for flight operations. Pilots are rarely out of sight of a lake large enough to "sit down" upon. Many of these lakes are situated in pristine country where all types of fresh water game fish abound and where sportsmen may find excellent deer, turkey and game bird hunting. The airplane may fly to the front doors of these virgin territories which are reached only with great difficulty by ordinary surface travel.

With the longest coast line of any state in the Union, in fact some fifteen hundred miles, Florida's shores afford many natural landing fields, such as Daytona Beach. The many, small, land-locked harbors and bayous on the Gulf give ample protection and have been included in present plans for construction of ramp, refueling and other facilities along the coast just as in the case of facilities on the numerous lakes.

To the state planning board, many factors enter into the broad program and no stone is left unturned in guaranteeing future growth and expansion of aeronautics. At the last session of the state legislature, the road tax was eliminated from aviation gasoline. Beautification of all facilities is considered paramount and the initial success of this phase of improvement is largely due to the many Garden Clubs of Florida whose efforts have resulted in the planting of more than forty thousand cuttings of sub-tropical plants, shrubs and trees. In many instances their assistance and cooperation has been enthusiastically given in designing and planning for this important division.

As the ten year plan progresses, so will the State's complete conversion to flying become a reality. Major McMullen has recommended that an airport or emergency field of some description be built approximately every 15 miles throughout the peninsula. In his own words, he maintains: "This should be accomplished, first, by building an airport in every town and city; and then, by building an intermediate or emergency landing field between all such airports that are more than 25 miles apart."

Approximately 63 additional airports and intermediate fields are needed to complete a state-wide system of 197 ports which will make flying reasonably safe for all types of land planes and for all classes of pilots, both day and night, and in all kinds of weather. The proposed development of 25 additional seaplane bases will take care of the flying boat and amphibian enthusiasts.

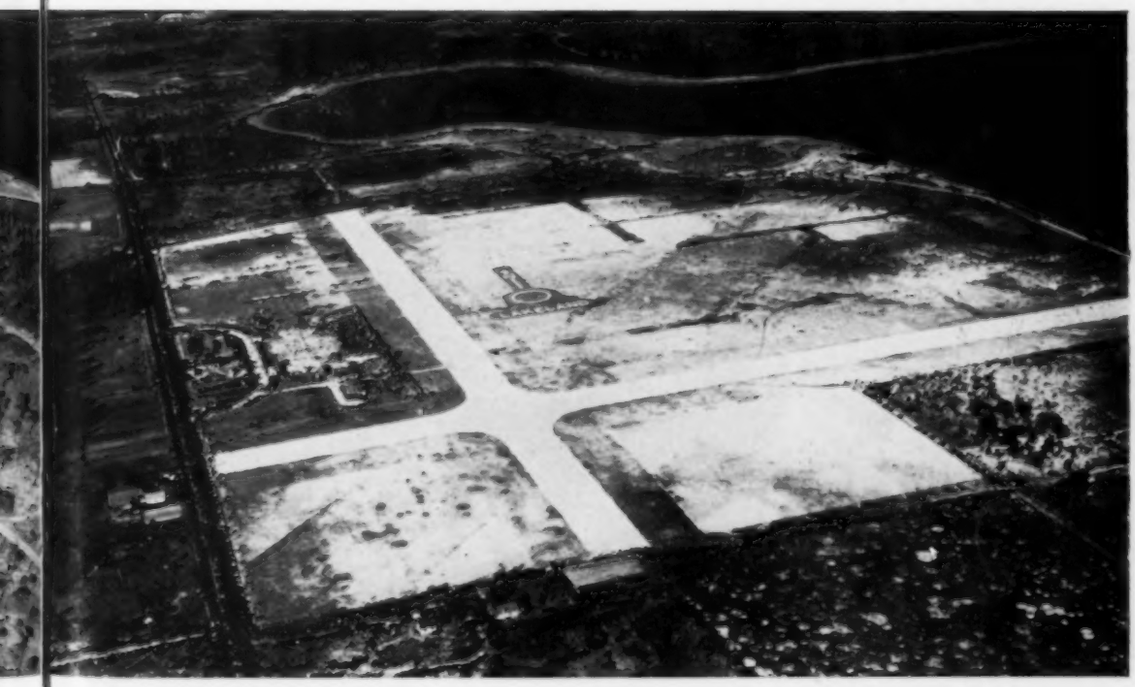
Over 7,000 gallons of paint, costing $9,550 will go into aerial directional markers consisting of the name of the town in which the airport is located, painted on the largest available roof, together with a meridian marker, the direction and distance to the nearest airport.

There will be little chance of airmen "getting lost" either in fair weather or foul, and the ability to sit down most anywhere within the state will be Florida's greatest aeronautical asset. The groundwork for aviation development will have been laid.

The value of Major McMullen's aviation program was clearly illustrated recently when the Federal Government sponsored the allocation of funds on a larger scale through the WPA. During the preliminary survey the Government cast around for a workable plan on which to base its activities. The Florida plan was presented and through virture of its practicability, its well-mapped and carefully laid out details, Florida has been granted many concessions. Latest reports from Washington bring the gratifying news that the state will secure forty-three projects out of a total of one hundred and forty-six approved projects for twenty-four states. Florida has its Governor and Director of Aviation to thank for this cheering news. They were quick to realize that aviation can progress in the state only just so far as adequate facilities are provided.

By the time winter is upon us, Florida will be able to accommodate the hosts of private flyers who have already made known their intention of flocking to the sunshine state this year and next, and, at the same time, provide for her own sons and daughters who fly in tourist season and out.

When you fly down for the Miami Air Maneuvers in December, take a look around. You will be welcome on every airport, elaborate or small, in the State. Florida is prepared for your visit.



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Aircraft 1935

Douglas Sleeper - Transport

WITH initial test flights of the huge, bi-motored Douglas Sleeper Transport scheduled in November, details of the new product have been released by American Airlines, who contemplate placing the super-transports in domestic operation early next year.

With a gross weight of 24,000 pounds, the DST will be two and one-half tons heavier than its famous predecessor, the DC-2 Transport. Its wing span of 95 feet, an overall length of 65 feet and an overall height of 17 feet, 6 inches renders the DST the largest land plane ever developed in the United States for scheduled air transport operation.

In exterior appearance the new Douglas will resemble a much larger version of the present DC-2. From the front, the width of the fuselage in comparison to its height will be much more pronounced and other specifications will be considerably more generous. Predicted top speed is 215 miles per hour under full load at 7,000 feet.

The two power plants will be capable of developing approximately 1,000 horsepower each. Normal cruising speed at 12,000 feet with 70 per cent available power will be over 190 miles per hour. Landing speed is estimated at under 65 miles an hour. Cruising range will be 1,100 miles with 24 passengers or 1,400 miles with 16 passengers.

POWER will be sufficient to permit completion of take-off and climb with one engine and allow uninterrupted flight with full load on one engine. Two automatic con-

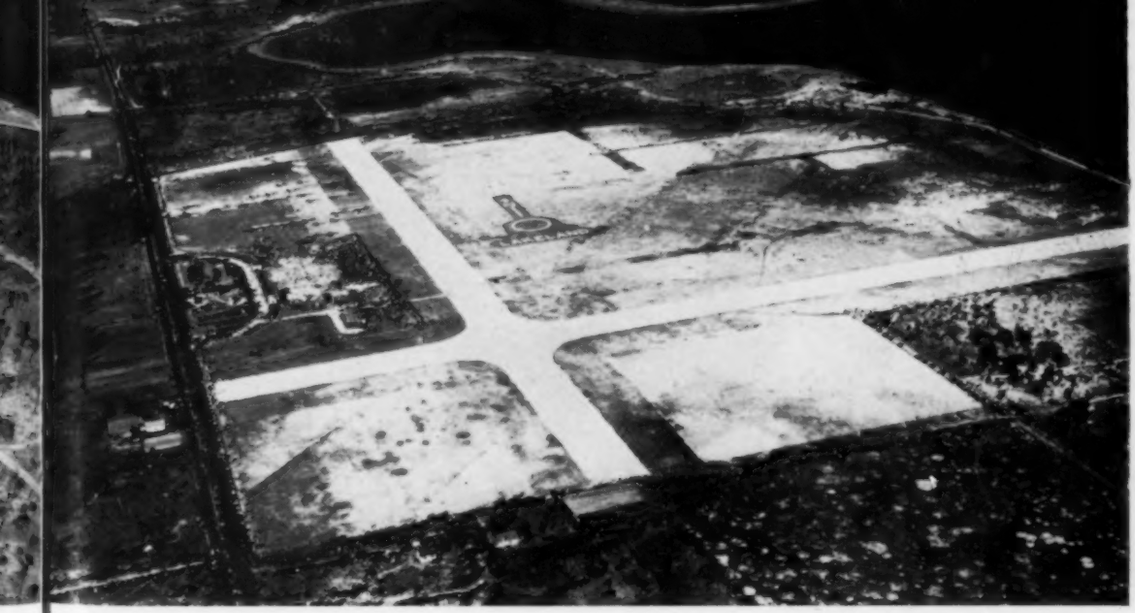
seats will fold together to form a thick, soft foundation for the mattress of the lower berth. The upper berth and mattress will be dropped into position from the ceiling of the section.

Each berth will measure six feet five inches in length—several inches longer than the standard rail sleeper berth—and will enable even the taller-than-average man to stretch out in complete comfort. Lower berths will measure 35 inches in width and the uppers 29 inches.

BOTTOMS of the lower berths will be five inches above the floor leaving a convenient space for the storage of small hand luggage. The thick soft springs and mattress will add another nine inches to the height, holding the sleeping passenger fourteen inches above the floor of the cabin. The upper berth will be 46½ inches above the floor and steps will be provided to enable passengers to enter this berth with ease.

Cabin windows will serve the lower berth. A smaller window, at the head, will serve passengers in the upper. Both berths will be complete with reading lights, clothes nets, electric call buttons to summon the stewardess, and baggage racks.

For the first time, separate dressing rooms will be provided for men and women passengers. These will be located at the rear of the cabin and will be complete with running



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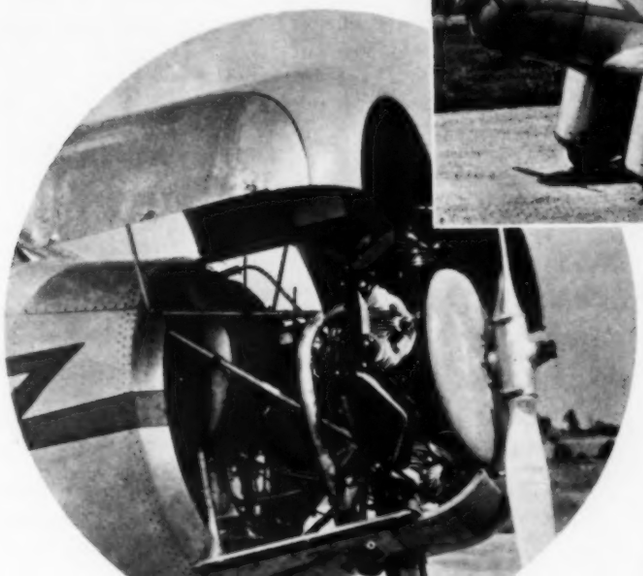
Curtiss-Wright Coupe



SEATS TWO, TRIM, ALL-METAL AND FAST

Above: Three-quarter front view of the Curtiss-Wright 19L Coupe designed for the "average" pilot. With a fixed slot and flap contributing to ease in handling, the two-place, side-by-side coupe cruises at 115 m.p.h. over a normal range of 580 miles.

Left: Mounting of the R-266 90 horsepower engine is on steel tubular structure with engine supported on rubber bushings to absorb vibration. No part of the cowl is attached directly to the engine.

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POWER will be sufficient to permit completion of take-off and climb with one engine and allow uninterrupted flight with full load on one engine. Two automatic constant speed propellers and retractable landing gear are utilized. The pilot's cockpit will include every aid to navigation including automatic pilot and latest radio developments.

Eight roomy sections, four on each side of a broad aisle, will comprise the interior of the passenger cabin, each section will include two seats, each 35 inches wide, facing each other. By night the backs and bases of these seats will fold together to form a thick, soft foundation for the mattress of the lower berth. The upper berth and mattress will be dropped into position from the ceiling of the section.

Each berth will measure six feet five inches in length—several inches longer than the standard rail sleeper berth—and will enable even the taller-than-average man to stretch out in complete comfort. Lower berths will measure 35 inches in width and the uppers 29 inches.

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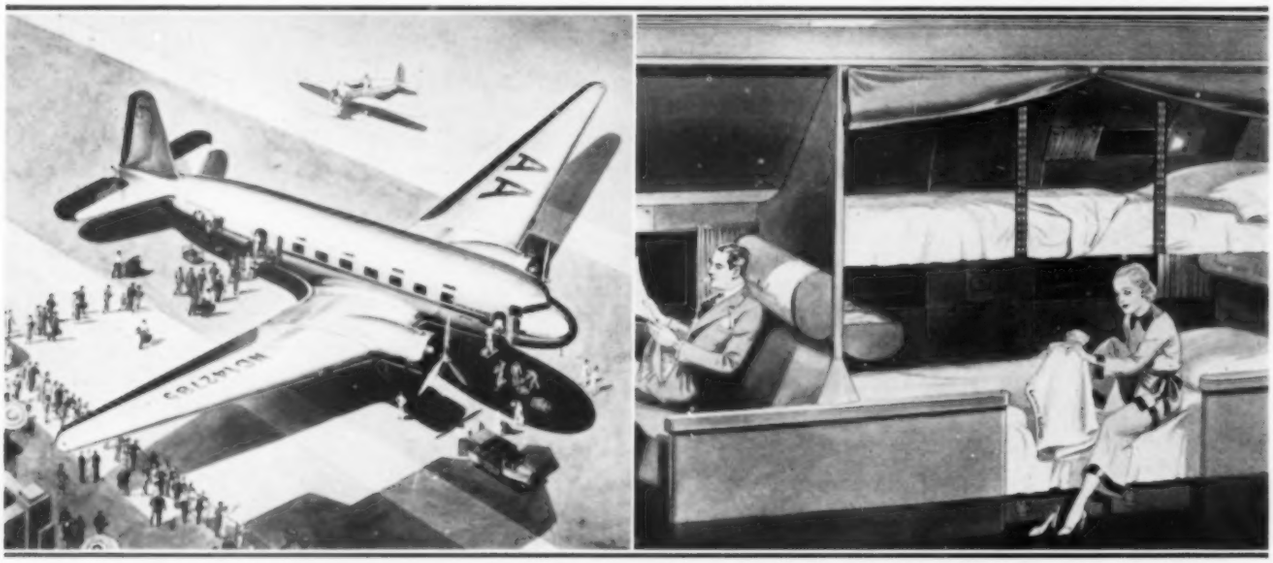
For the first time, separate dressing rooms will be provided for men and women passengers. These will be located at the rear of the cabin and will be complete with running water, mirrors, and linens. Toilet facilities will be separately located at the rear of each dressing room.

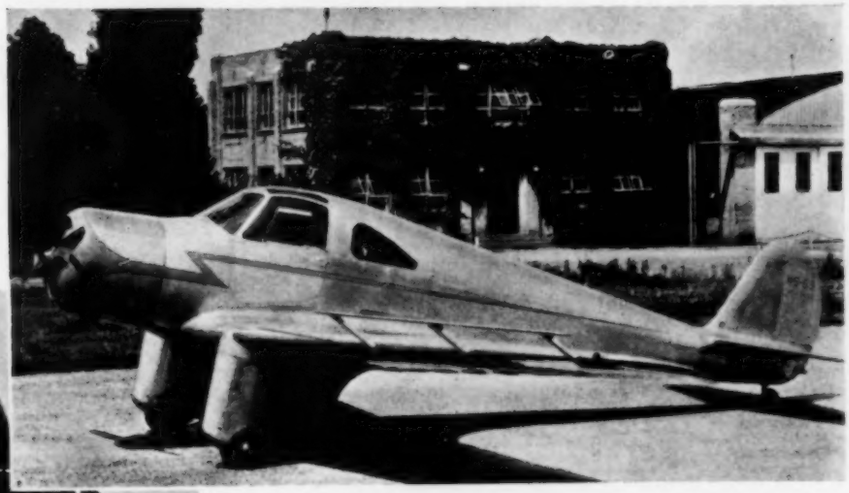
A complete commissary will be located at the front of the cabin, directly behind the pilot's cockpit. Provisions will be included for keeping food hot or cold indefinitely without need of thermos equipment now used, and the spaciousness of this department will enable the serving of much more elaborate meals than are now possible.

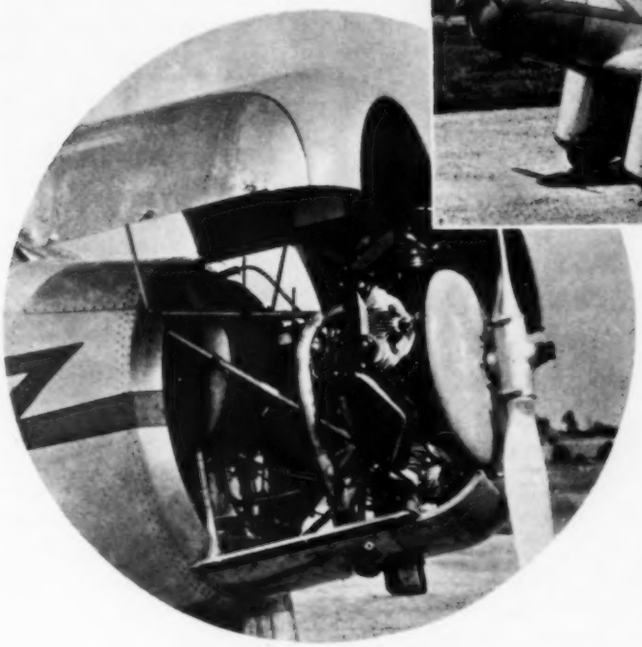


THE LARGEST LANDPLANE EVER DEVELOPED IN THE U. S. FOR SCHEDULED AIR TRANSPORT SERVICE

The new Douglas DST will go into service over the Southern Transcontinental Route early next year. With day accommodations for 24 passengers and sleeping accommodations for 16, the sleeper-transport will bring new achievemnts in luxurious transportation to airline service.

Curtiss-Wright Coupe





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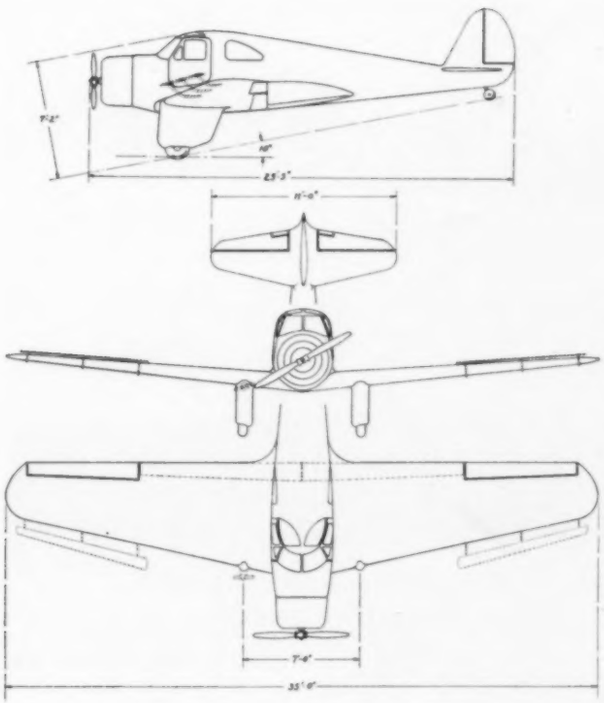
Model 19L



COMPLETION of the first unit of the carefully designed, all metal, low wing Curtiss-Wright Coupe in October marked the significant return of the Curtiss-Wright organization to the private airplane market.

Designed and constructed to meet the most exacting requirements of safety, performance and comfort, with a maximum provision for sufficient cruising range and speed to make it practicable for general cross-country flying in the hands of the average pilot, the new model evidences the marked influence of modern, all metal transport equipment design.

The R-266 Lambert 90 horsepower engine provides a top speed of 131 m. p.h., a cruising speed of 115 m. p. h. at 5,000 feet, a normal 580 mile range and a maximum range of 1150 miles. To provide a low landing speed, the all metal wing has been equipped with a fixed slot and a flap on the trailing edge, extending over 70% of the wing span. Excellent aileron control coupled with the above innovations make the airplane practically stall-proof and spin-proof. An especially designed landing gear with exceptional shock-absorbing qualities further contributes to the airplane's safety features.

The two place, side-by-side Coupe is skin stressed, with the skin guages identical with those used on transports, the material being 24ST Alclad duralumin.

The full cantilever all metal wing is built up of five spars, the duralumin skin being designed to carry the loads. The attachment angle of the wing runs over the entire surface of the wing and connects directly to the fuselage. The all metal ailerons are locked against down travel past the neutral position. This is accomplished by a combination of an idler link in connection with the control rod, whereby the pulleys are made to rotate idly when the aileron reaches the neutral position on its downward travel, even

though they are rigidly and directly connected with the opposite aileron control mechanism. The attachment of the aileron to the wing is accomplished by a full length piano-type hinge.

The above mentioned 70% span split flap is operated by a rotating handle of the same type as automobile window-lifts; this handle is located at the pilot's right near the bottom of the seat. Unlike conventional flaps actuating mechanisms, the type employed on the Curtiss-Wright Coupe is so operated through torque tubes that the load on the handle remains almost constant regardless of air load. The flap actuating mechanism is attached to the flap at five points, each position being adjustable.

THE fuselage is of all metal monocoque construction, consisting of raised rings, stringers, and skin assembled in the manner of modern transports. The two place, side-by-side cabin of the coupe is equipped with dual controls, with the right hand control detachable. Excellent visibility has been attained with an extremely low position of the engine, which affords unobstructed forward vision in all positions of the airplane. Sloping windshield, side windows and a large transparent panel in the roof are provided. In the top of the windshield two automobile type ventilators are installed, with rear vision mirrors mounted in them for good vision to the rear in landing. The ventilators are of the no-draft type, and suck air from the cabin. Fresh air is taken into the cabin through a duct opening in front of the engine, assuring pure, uncontaminated air. Two large doors, one on either side, provide easy access to either seat. The adjustable seats are fitted with spring cushions and upholstered to suit individual customers.

The control column is strictly conventional in its design and similar to those employed in modern transports, with the exception of the inverted position which allows the wheel to move directly fore and aft with no obstructions in the cockpit. The wheel shaft is held in place by a bearing at the instrument board.

The tail construction is similar to the wing. The stabilizer and fin are of the fixed type, with metal trim tabs on the elevators, operated by a Breeze irreversible mechanism.

(Continued from Page 24)

Consolidated XP3Y-1 Breaks Two Records

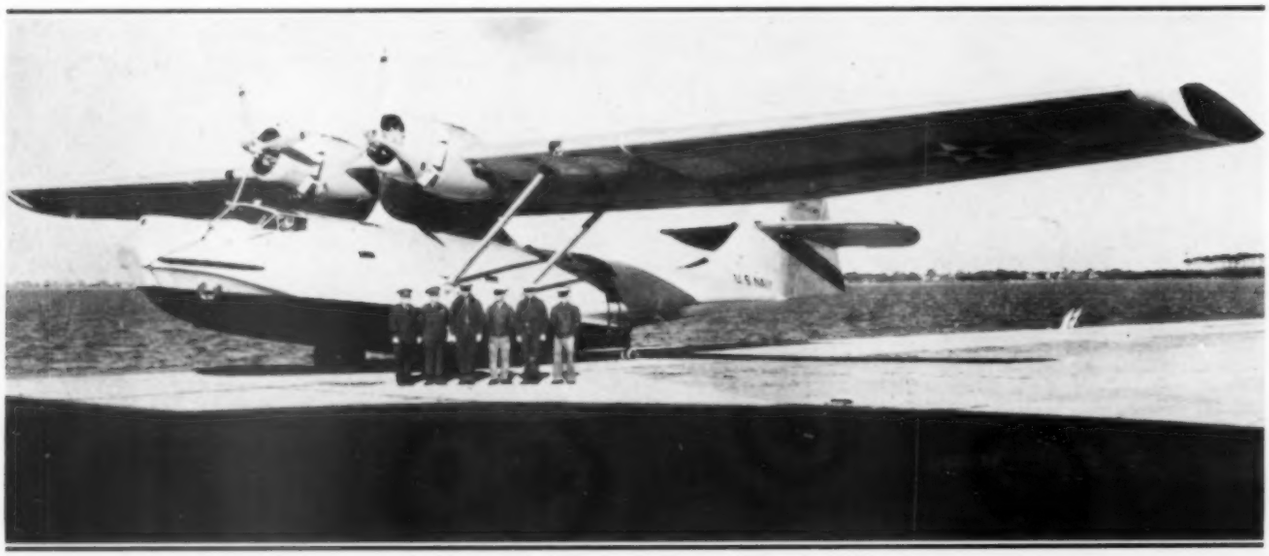
SECRETARY of the Navy Swanson announced last month that Lieutenant Commander Knefler McGinnis, executive officer of the Naval Air Station at Anacostia, and a crew of five in the patrol seaplane, XP3Y-1, had broken two international records for seaplanes—the record for air-line distance and the record for broken line distance by their flight from the Naval Fleet Air Base, Coco Solo, Canal Zone, to San Francisco, California, on October 14 and 15; and had broken Lieutenant Commander McGinnis' U. S. airline distance record of 2,398.999 miles.

The XP3Y-1 took off from Coco Solo, Canal Zone, at 6:30 o'clock (EST) on the morning of the 14th and arrived at San Francisco at 2:10 o'clock (PST) on the afternoon of the 15th, having covered 3,300 statute miles, broken line distance.

The previous international airline distance record for seaplanes was made on July 15, this year, by two Italian flyers, who covered 3,063 miles from Monfalcone, Italy, to Berbera, in Italian Somaliland.

The previous international broken line distance record for seaplanes was established on December 31, 1933 and January 1, 1934 by two French aviators in a flight from Berreport, Etienne, to St. Louis, Senegal, a broken distance of 2,356.908 statute miles.

Lt. Commander McGinnis commanded the flight of patrol planes from San Francisco to Honolulu in January, 1934, setting a world's non-stop record for distance, in formation, when the squadron flew 2450 miles in 24 hours, 45 minutes.



ONE FROM ITALY, ONE FROM FRANCE—TWO MORE INTERNATIONAL RECORDS REPOSE IN AMERICA

When the XP3Y-1 pictured above took off from Coco Solo on the morning of October 14th and arrived in San Francisco on the afternoon of the 15th, she had covered 3,300 statute miles, broken line distance. The crew (left to right): Lt. Commander Knefler McGinnis, Lt. James Kent Averill, aviation chief machinist mate Thomas P. Wilkinson, chief radioman Antonio E. J. Dionne, aviation chief machinist mate Charles Stanley Bolka and chief radioman Edward V. Sizer.

News Briefs

Notes From the Industry at Large

New Lockheed Sales Branch

The increasing interest in the Lockheed Electras in the South and Southwest both for air line and private use has resulted in the recent establishment of sales offices at Love Field, Dallas.

Don M. Marshall will be in charge of the new branch which is at present situated in Hangar One with Booth-Henning, Inc. Permanent offices will be maintained in Hangar Four now in process of construction.

Endowment For Reed Award

The will of the late Dr. Sylvanus Albert Reed has named the Institute of the Aeronautical Sciences in a bequest of $10,000 for the endowment of the Award that bears his name.

The award was established in 1934 by Dr. Reed to be given annually for "A notable contribution to the aeronautical sciences resulting from experimental or theoretical investigations, the beneficial influence of which on the development of practical aeronautics is apparent."

The first award was made last year to Professor C. G. Rossby and Dr. H. C. Willett of MIT for the practical application of the polar front theory of weather forecasting to American meteorological practice.

Dr. Reed designated Dr. Jerome C. Hunsaker, Charles L. Lawrance and Major Lester D. Gardner to administer the award.

New Twenty-day Requirement

According to an announcement received from the Bureau of Air Commerce, license of civil pilots who become ill or otherwise unable to fly or follow their customary vocations for a period of twenty days or more, will be automatically suspended on the twentieth day. Pilots will be required to be re-examined and pronounced fit by a Department of Commerce medical examiner if the examiner deems such action necessary. Effective November 1st, this amendment to the Air Commerce Regulations will apply to holders of all grades of licenses including students.

France Plans Round-World Flight

Similar to the McPherson Robertson Race of last year, the Aero Club of France is sponsoring a round-the-world flight for 1937, offering a first prize of $200,000, a second prize of $100,000 and other prizes totalling $33,000.

The proposed race is to be run in connection with the Paris Fine Arts Exposition and will be open to all comers.

New Craft For Navy

Plans to award contracts for 60 torpedo-bombing planes by January 1, 1936, were disclosed last month by Rear Admiral Ernest J. King, head of the navy's bureau of aeronautics.

Returning to his office from an inspection of all naval aircraft bases west of the Mississippi, King said new craft are wanted to replace overage planes assigned to the carriers Lexington and Saratoga.

"Later we hope to buy new planes for the carriers Yorktown and Enterprise," King stated in his explanation of expansion in naval aviation to bring the navy to treaty strength by 1944. Estimates are that 283 planes are needed to replace outworn crafts; additional planes are also sought.

Bi-Motor Monocoach Announced

A NEW, twin-engined, four-place Monocoach is being designed at the Lambert Aircraft Corporation plant, Robertson, Mo. It will be powered by two Lambert R-266 engines rated at 90 horsepower each. The Monocoach will have a range of approximately 1000 miles at a cruising speed of 145 m. p. h. Top speed will be in the neighborhood of 170 m. p. h. Retractable landing gear will be employed. Space for 200 pounds of baggage is to be provided.

The Lambert company is also assembling the first unit of a new trainer series to be offered in open and closed models, of the two-place, low-wing, full cantilever, side by side monoplane type. Power will be furnished by the R-266 five cylinder radial Lambert engine. Gross weight of the open trainer is 1326 pounds, and 1517 pounds for the closed deluxe model.

Women's Championship Air Races

On November 10th and 11th the champion woman flyer of the United States will be determined during the Women's Championship Air Races and Pacific Air Pageant to be held at Long Beach, California under the sponsorship of the Long Beach Junior Chamber of Commerce and sanctioned by the NAA.

A transcontinental dash will be the main event and three other races over closed courses will be open only to women pilots. Contestants will be required to make an overnight stop at Amarillo, Texas. Prizes will total $6,800.

Mrs. Gladys O'Donnell is managing director of the Long Beach Classic and Laura Ingalls, Ruth Nichols, Jacqueline Cochran, Marie Bowman and Henrietta Lentz have already signed the entry blanks.

Mail Pilots Receive Awards

President Roosevelt late last month awarded the air mail flyer's medal of honor to seven air mail pilots for extraordinary achievements during the past year.

Those who received the medals were:

Lewis S. Turner, Fort Worth, Texas; James H. Carmichael Jr., Detroit, Michigan; Edward A. Bellande, Hollywood, California; Gordon S. Darnell, Kansas City, Mo.; W. J. McFail, Murfreesboro, Tenn.; Roy H. Warner, Portland, Oregon, and Grover Tyler, Seattle, Washington.

Postmaster General Farley and Assistant Postmaster General Branch presented the flyers to the President.

Traffic Control Spreads

The practicability of radio traffic control for airports is being evidenced by the installation of the Western Electric 10-A Transmitters on airports throughout the country. Sixteen recent installations are reported and the fact that the radio control permits communication of weather, landing conditions, two-way talk and landing instructions explains the increasing popularity of these transmitters on heavily trafficed airports.

Inaugural Flight

A great crowd attended the ceremonies which took place last month under the flood lights of Bates Field, Mobile, Alabama, on the occasion of the inauguration of the new and faster passenger mail service of the Eastern Airlines with the new Lockheed Electra planes over the New Orleans-Mobile-New York route.

Commissioner Cecil F. Bates, for whom the municipal airport of Mobile was named, was present along with Eastern Airlines officials. The new schedule cuts the travel time from New Orleans to New York by two and one-half hours.

Flying Laboratory

A specially constructed Fairchild 22 has been delivered to the Navy Department, which in turn delivered it to the National Advisory Committee for Aeronautics at Langley Field, Va., for use as a "Flight laboratory" for studying and measuring the aerodynamic characteristics of experimental wings in actual flight instead of merely in wind

The cockpit covering aft of the first wall to the rear cockpit has been made of metal, making it possible to remove the covering quickly in easily detachable panels. This arrangement facilities access to the fuselage for the purpose of making quick changes of wings, flaps, slots and other wing units and of instruments used in testing them.

The fuel tanks are located in the wing in order to permit changing of wings without having to disconnect and connect fuel lines. The ship is powered, as is the Standard Fairchild 22, with the 145 horsepower Warner Super Scarab engine.

Surprise Test

Col. Charles A. Lindbergh made a surprise visit to the Monocoupe factory at Lambert St. Louis airport last month in his own Monocoupe while en route to the East from Roswell, New Mexico.

He spent three hours checking over the new Monocoupe by both blue print and actual flight. Lindbergh was accompanied on his trip east by Harry Guggenheim, one of the administrators of the Guggenheim Aeronautical Foundation, backer of the rocket experiments now in progress near Roswell.

Mitchell Trophy Race

Capt. Karl Gimmler won the Mitchell Trophy race when he shot his speedy Boeing pursuit around a 20-mile course at a speed of 212.09 miles an hour over Selfridge Field, Michigan, on Oct. 19th.

This was the eleventh contest for the John L. Mitchell Trophy and fliers from the Third Attack Group, Barksdale Field, Louisiana, the Eighth Pursuit Group, Langley Field, Virginia, and the 107th Observation Squadron of the Michigan National Guard participated in the air show which was held in conjunction with the race. A crowd of 45,000 attended the event.

Navy Fledglings

The Navy Department has announced that the following men from the South and Southwest have been accepted for flight training and appointment as aviation cadets in the Naval Reserve:

From Georgia: F. W. Williams, Macon; H. N. Horton, Macon; F. G. Kennedy, Midville; N. M. Moore, Augusta.

From Florida: G. V. Blackmore, Coconut Grove; W. G. von Bracht, Fort Myers; A. B. Royal, Jr., Arcadia; J. P. Falton, Apappa.

From Louisiana: W. H. Rogers, Jonesboro; B. L. Prevost, Mansura; H. S. Blake, Baton Rouge.

Others include J. E. Hines, Russellville, Ark.; G. W. Snider, Fremont, Missouri; R. G. Touart, M. Miller, and M. B. Miller, Mobile, Ala.; T. A. Shaw, Ada, Okla.; W. H. Gard, Grand Bay, Ala.; W. P. Banks, Newton, Miss.; and W. H. Hedden, Austin, Texas.

Rogers' Medal Award

More than 500 leading business and professional men, aeronautical authorities, Army and Navy officers and famed pilots attended the banquet given by the Aeronautic Division of the American Society of Mechanical Engineers in St. Louis on October 11th.

The occasion was the presentation of the Spirit of St. Louis Aeronautical Medal for 1935 which was awarded to the late Will Rogers before his death. The posthumous presentation was made to James H. Doolittle, who acted as a proxy for Mrs. Rogers, later flying the trophy to Mrs. Rogers in California.

The award was voted to Rogers "for the splendid constructive and unselfish work he has done in the advancement of aviation and the building up of confidence in aviation through his articles in the press, over the radio, and from the speaker's platform."

Three Projects For S. Carolina

Senator James F. Byrnes of South Carolina announced last month that WPA funds had been made available for airport development in three South Carolina municipalities. The projects approved were:

Georgetown, $34,526 of which the sponsors will furnish $10,000.

Orangeburg, $22,994 of which the city will furnish $8,844.

Hartsville, $18,847 of which approximately $5,000 will be provided by the municipality.

Last Flight

The last airmail flight in the United States in an open cockpit airplane was flown over Eastern Air Lines in a Mailwing which left Chicago for Jacksonville on October 14th.

A special cachet was arranged by Captain E. V. Rickenbacker, general manager for the line, to commemorate this "passing of the pony express of the air." The old mail ships were replaced by Lockheed Electras.

W. E. House Organ

The first issue of a new magaizne named "Pick-Ups" has been issued by the Western Electric Company. The introductory editorial states that the magazine will be devoted to "news of developments in the field of sound, and of the organizations and men who use the equipment designed by Bell Telephone Laboratories, manufactured by Western Electric and distributed by Graybar."

The publication will be issued several times a year and will be circulated chiefly to users of Western Electric equipment such as broadcasting stations, police departments and air transport companies, as well as to prospective users. The editor is Will Whitmore, and the assistant editor is M. M. Beard, both of the Company's headquarters staff at 195 Broadway, New York City.

News From the Schools

Robertson

Lt. Dan R. Robertson, president of Robertson Aviation School, recently announced the appointment of Lt. J. W. Geppert of the United States Naval Air Reserve as chief instructor of the pilots ground school. Lt. Geppert is a naval aviator, having received his training during the world war at Miami and Pensacola and served as an instructor at the Massachusetts Institute of Technology and also at Miami.

Geppert is an expert navigator especially as regards nautical astronomy as applied to aeronautics. He has written his own texts of navigation and meteorology and taught several transatlantic flyers on these two subjects.

Parks

With the largest student enrollment since 1929, Parks Air College has a new student registration of 92 at the Fall Term, making a total of 252 resident students. This compares with 197 in the Fall of 1934. Of the 92 new enrollments, all but 11 were for the two-year courses. Forty students are registered in the executive transport pilots' school, 80 in the aeronautical engineering school, 96 in the master mechanics' flight school, while the remainder are taking combination or partial courses.

The increase in resident students has necessitated the construction of a fourth dormitory on the campus. It will accomodate 16 students and will be ready for occupancy before the holidays.

Ralph B. Wagner, A. M., Ph. D., instructor in art of speech, sales and advertising, started his work at Parks with the opening of the Fall term, September 30.

New lathe equipment has been installed in the Parks Mechanics' school for the use of advanced students.

Boeing

Sixth anniversary of the founding of the Boeing School was observed on September 16th. On September 19, its 21st class was graduated.

Wesley Davis, of the maintenance department, is now in charge of parachute instruction. Davis has had extended experience with the Irving Airchute Company.

Curtiss-Wright

Twenty-seven new students were enrolled in September, thereby topping the former record month, July, by three students. Ten graduates and two students of the Institute were recently placed in the industry.

News has been received that Raymond Footit, former student from Canada, is now connected with Heston Aircraft Company of England.

Kenneth Rearwin was a recent visitor during his sales tour of the Southwest. He was flying a late model 85 LeBlond powered Sportster.

The practice of allowing students to follow through on their own original designs during their AE course has been inaugurated. Permission is granted the student to work on his own design rather than the regular school project with the understanding that he will meet the standards of the Institute. It is felt that the individual type of instruction is especially valuable because of its creative feature and the added interest the student takes in the development of his own original ideas.

Ryan

Eighteen new students reported for training at the Ryan School on September 30th. Among them were Herbert Finley of Dalhart, Texas, Tom Exley, Pittsburg, Kansas, and John Miller, Wilcox, Arizona.

Most notable student is Cliff Durant, son of the famous automobile manufacturer, who is taking a course in advanced navigation while awaiting delivery of a new Ryan S-T monoplane, which will have special instruments and additional gas and baggage space by covering the forward cockpit.

Thousands of dollars worth of additional ground school equipment will be installed in the enlarged quarters of the school in anticipation of a larger enrollment during the winter months. The new building, located adjacent to the Ryan Aeronautical Company factory, will house the airplane drafting, aircraft welding, engines, and rigging departments.

Ryan transport students who are scheduled to begin the fall program of cross country training will take the northbound trip along the Pacific Coast shoreline, with the southbound trip covering the inland route through Fresno, Bakersfield, the Mojave Desert and the Tehachapi Mountains.

Famous visitors of the month include Amelia Earhart; Mayor Charles L. Smith of Seattle; Skeets Gallagher and Ben Lyon; General Hugh Johnson; Gordon Mounce, salesman-pilot for Consolidated; and Madame Marvignt, of Nancy, France, who twenty-five years ago was the first woman to fly a plane.

Lincoln

According to a recent announcement, a government approved, one-year airplane and engine mechanics' course has been established at the Lincoln Airplane & Flying School. The school has held a government approval for its transport flight school since 1930.

New equipment recently installed includes a Wasp, Cyclone, Whirlwind, Kinner and a new Packard Aircraft Diesel for the engine department.

DALLAS AVIATION SCHOOL DALLAS TEXAS
Wonderful Equipment . . . . Excellent Shops . . . . Splendid Accommodations
SHIPS—Lockheed, Bellanca, Tri-Motored Ford, Fleets, Waco, Fledgling, Stearman. A REAL line-up.

Get into this fascinating industry—but COMPARE before you choose a school for either flying or ground instruction. D. A. S.—with right equipment and thorough training—offers you success at lowest cost. Write us your plans. *Catalog free.*

C. & S. Purchase Radio Equipment

New two-way radio equipment is now being installed by Chicago and Southern Air Lines over its entire system from Chicago to New Orleans.

The new development program represents an investment of approximatley $18,000.00 and calls for radio transmitter and receiving equipment in Chicago, St. Louis, Memphis, Jackson, and New Orleans.

The equipment is to be located at these airports and requires the construction of a new radio building with the necesary masts, antenaes, etc., in St. Louis, and in Memphis. The equipment will be installed in the Northwest Airlines hangar in Chicago; and in Jackson the Company's transmitter and receiver will be located in the Administration building at the Municipal Airport. In New Orleans the equipment will be installed in the Eastern Airlines hangar. Radio operators will be on duty at all of these stations 24 hours daily.

Norton Gets Radio Compass

One of the first commercial models of the Fairchild Kruesi Radio Compass has been installed in the deluxe Lockheed Electra owned by R. W. Norton, independent oil operator of Shreveport, La., and San Antonio, Texas. The installation was completed at the Glenn Curtiss Airport, New York, and the plane was flown south by Curry Sanders, Mr. Norton's personal pilot.

NOW is the Time to Get Ready for the BIG PAY JOBS IN AVIATION

. . . and LINCOLN is the school to choose for complete training which leads to success. The governments of the world are spending hundreds of millions of dollars in aviation development. This means thousands of high salaried aviation jobs. Now is the time to let LINCOLN training prepare you for the wonderful future ahead in aviation.

$500 a month

That's the kind of big pay earned by airline pilots!

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QUALIFIES YOU FOR A SUCCESSFUL CAREER! You should have the unexcelled Lincoln training if you want to qualify for these better pay positions in aviation. 14 years success teaching aviation and 25 years successful experience as a mechanic's trade school recommends this famous **Government Approved School** to you as the school better able to train you properly.

Finest Training—Best Equipment—Only modern, high class training planes with Dept. of Commerce approval are used. Training for government license as Transport, Limited Commercial, Private or Amateur Pilot. Complete training includes blind flying by instrument, cross country, acrobatics. High wing and low wing monoplanes, biplanes, cabin planes, etc., for complete experience. Both flight and mechanic's training under **Government Supervision.** Our Government Approved Mechanic's School with high class, experienced instructors, qualifies you for your **Government's Mechanic's License.**

WRITE NOW for further interesting facts. Please state your age.

LINCOLN AIRPLANE & FLYING SCHOOL

801 AIRCRAFT BLDG. LINCOLN, NEBRASKA

Curtiss - Wright Coupe

(Continued from Page 20)

The elevators and rudder are of all metal construction, piano-type elevator hinge extending from the tip to the root section.

A FULL monocoupe landing gear with a ten-inch oleo stroke and full air wheels is employed. The landing gear is held in the take-off position by a small latch in the oleo, which is automatically released on the first turn of the flap. Both parking and footbrakes are hydraulic. The parking brake is a simple sliding control on the instrument board that operates a screw stop on the hydraulic cylinder.

The R-266 Lambert engine is mounted on a steel tubular structure, the engine being supported with rubber bushings to absorb vibration. The cowl is so designed that no part attaches directly to the engine, thereby permitting the engine to move freely inside the shell. The cowling is supportd by steel tubes from the engine mount, and has a piano-type hinge running along the top side.

SPECIFICATIONS AND PERFORMANCE

DIMENSIONS			
Wing Span	35′	Useful Load	646 lbs.
Length Overall	25′ 6½″	Gross Weight	1800 lbs.
Height	7′ 2″	Fuel Capacity	52 gal.
Wing Area	174 sq. ft.	Oil Capacity	5 gal.
Wing Loading	10.3 lbs. sq. ft.		
Power Loading	19.9 lbs. sq. ft.	PERFORMANCE	
Stabilizer Area	18 sq. ft.	Maximum Speed	131 m.p.h.
Elevator Area	10 sq. ft.	Cruising Speed	115 m.p.h.
Rudder Area	4.5 sq. ft.	Rate of Climb	500 ft. min.
Total Aileron Area	11.9 sq. ft.	Stalling Speed	44 m.p.h.
WEIGHTS		Ceiling	17,000 ft.
Weight Empty	1154 lbs.	Gas consumption.	5.8 gal. per hour at cruising speed

Crary Before A. S. M. E. Conference

Interpretation of problems confronting the development of air transportation and a discussion of the trend of its growth was given before the annual meeting of the American Society of Mechanical Engineers at St. Louis on October 11th by Harold Crary, vice president of United Airlines in charge of traffic.

Stating that revenue from air mail was substantially less for 1934 and 1935 in spite of large load increases, Crary pointed out that the industry is passing through a period which demands the formation of a sound national policy under which air transportation can be developed and properly regulated.

He cited the following indications of continued growth of air traffic: Substantially improved performance records; educational work bearing fruit with an increasing percentage of new passengers; greater cooperation among air lines; cooperation with other carriers; increasing use of air lines by vacation travelers; potential growth of air express; and improved sales methods.

Rail-Pullman Fares Announced

Effective October 20th, rates between Kansas City and Chicago equalling rail plus Pullman rates, were announced by Braniff Airways. A Lockheed Vega has been substituted for the Electra on one trip in and out of Chicago to make lower rates possible.

Ports of Call

Correspondence from the Airports and Airways

Beaumont, Texas

Air Progress week was celebrated in a big way in Beaumont from Sept. 29th to Oct. 5th with the majority of the events of a downtown nature. Speeches at luncheon and civic clubs, radio talks, special window displays and the like stirred up a great deal of enthusiasm for aviation. On the Sunday following Air Progress week, which was held in conjunction with the National Aeronautic Association, the largest crowd seen at the airport in many months was assembled, although no special events of any kind had been contemplated or advertised. An unusual amount of passenger hops and new students were direct results of the educational campaign. Miss Helen Johnson, special represenatative for Braniff Airways, was guest speaker for the week and graciously kept a strenuous schedule of talks during her stay here.

Solos during the past month included Vernon Hamm, T. E. Daniels, Garth L. Johnson, J. C. Townsend and his brother, C. C. Townsend, and A. E. Proft. Student activity continues to hold up well here.

E. A. West purchased R. C. Hyland's Taylor Cub; B. Frank Edgar's Air Camper was flown with a new motor. Edgar has just completed work on a new cowling for this ship. C. C. Palmer is again storing his Inland Sport here and Bruce Votaw's Skylark has been repainted a brilliant yellow.

"Removed to new address" includes Lois Neel, who is now in Houston and Dick Williams who flew his Warner-Inland back to California; he left his LeBlond Inland here and it will be operated by Ody Turner.

The Wing Over Club's spot landing contest was won by Andy Gibson, three-time winner. Bob Thomas was second with two wins. The pot amounted to $33.50.

Drilling operations have been started by the Humble Oil company within a mile of the airport, the derrick giving the boys something to dodge around. However, oil leases on the airport have already netted the city $13,772. The big fight at the moment is to prevail upon the city to spend this money for much needed airport improvements. The Exchange Club has taken a very active interest through their Aviation Committee and we are hoping that the money will be spent for this purpose by the city. Past experience on airport maintainence makes all the pilots rather sceptical, however.

Jimmie Cruikshank's Porterfield, which has had a refinishing job, is back at the old port for a few days. It was flown here by Ody Turner from Baton Rouge.

Johnny Organ is attending the University of New Mexico at Albuquerque, leaving his Fairchild 22 here where it is being operated by W. N. Vickers, Jr. pilot for the Fairchild Flying Service.

Chanute, Kansas

On account of a fog bank encountered north of Chanute, fifteen Army planes from Barksdale Field, Shreveport, Louisiana made this their base for an over-night stop. Captains McCoy and Bailey were in command.

A Braniff airliner was also an unexpected over-night visitor, with bad weather likewise the reason for making this port.

Ross Cooper is building up time in the Aeronca. Merle Smith of Garnett traded his Travel Air to Jimmy Butler of Topeka for a Warner powered Cessna. H. G. Harper, manager of the Joplin, Missouri port, purchased the Monocoupe from Rosco Mendenhall.

O. E. Dickerhoof has transferred the Monocoach to Salina, Kansas, bringing the Stinson from Salina to the Chanute Airport. Vera Dawson, "Dick," and Jimmy Clarke attended the recent Pawnee Celebation at Republic City, Kansas. Mr. Dawson made two parachute jumps during the aerial maneuvers at the celebration.

Coffeyville, Kansas

In spite of inclement weather, Coffeyville's 6th Annual Air Meet and Races proved to be a decided success; rain which had threatened all day, cut short the program late in the afternoon. A record number of visiting ships were present, and a unique feature of the show, a hot air balloon ascension by Hardie Dillinger from Little Rock, Arkansas, was presented just prior to the rainstorm, the balloonist receiving a good soaking on his descent to earth.

Several local ships have had overhauls on their motors during the past month, including the Wasp Jr. on the O. C. S. Mfg. Co. Spartan, this being a top overhaul; a general overhaul on the Challenger Robin of Berentz, and a major on the OX Robin of Lee Ferguson, the work being done by Paul Wade, Stanley Price, Jr., Lee Ferguson, and Lynn Berentz.

Sandy Sanford, Independence orchestra leader, is taking instruction from Airport Manager Berentz on the American Eagle.

Mr. R. W. Knight and Mr. Cornelius have been demonstrating the Cornelius Frewing here lately, although quite a new thing in the way of airplanes, it is a sweet ship.

Visitors during the past month include: Skelly Oil Co. Spartan from Kansas City, Merle Smith's Cessna from Chanute, Ray Epperson in a Cavalier from Bartlesville, a Rearwin Jr. from St. Louis, the property of the A. W. Leeds Flying Service, the Bridgeport Machine Co. Waco from Wichita.

Department of Commerce Inspector J. H. Douglas on his last visit renewed the licenses on Coffeyville Airways Corporation American Eagle, and Lynn Berentz' Challenger Robin.

Fort Worth, Texas

The best news for Meacham Field in recent years is word from Washington that plans for the new Administration Building, the complete lighting system and signal system have been approved. Work will begin in December. Perhaps, upon completion of the new improvements, we might escape the jeers of visiting airmen who point with disdain at the kerosene lanterns and Model T flood lights. Removal of the rocks on the runways will be the only necessary improvement left to be made.

Jack Mitchener returned to the field after a two-year absence, and is now brushing up on the requirements for a transport license. Jack put in two years flying in Mexico.

H. S. Jones, plotter of round-the-world courses, reports that Loyd Earl was painfully but not seriously injured

in his recent unsolicited initiation into the Caterpillar Club down in Santo Domingo. With R. O. Dulaney, Jr., Earl will return to the states next month. "Monte" Snedeker will return with them for a visit, but will probably go back for another year in the island republic.

Jack Herbert III arrived last month in his Stinson Reliant after spending the summer months in New York. Charlie Curry is the pilot. Homer Truax, who flew for Mr. Herbert for several months this year, has jumped from a co-pilot's seat with Braniff to a first pilot's position with Bowen.

Jimmy Pon Mar, Chinese transport pilot of Fort Worth, has returned to his original home in Canton, China, where he will attempt to get connected with military or civil flying in the Far East. It appears he will arrive home in time for the war now impending between Japan and his republic. Best of luck to this outstanding pilot from his many friends on the field.

Buster Trimble gave Meacham Field an exhibition of how cotton-dusting was done. He departed recently to resume operations in South Texas, flying his Travel Air "duster."

Dr. John D. Covert of Fort Worth believes his father is the oldest air traveler ever to embark at Meacham Field. A native of Michigan, Dr. Covert's father has seen 95 years and flew from Chicago via Braniff late in October, remarking he would not travel any other way.

Another distinguished visitor of the month was Col. Luis Farell, head of civilian aviation in Mexico. He was en route to his home from the Washington celebration of Air Navigation Week.

MEACHAM FIELD
THE TEXAS
Fort Worth's Largest and Most Popular Hotel
A City Within Itself
Dine and Dance Nightly in PALM COURT, Top o' Texas, and in the RATHSKELLER, Fort Worth's outstanding night spot. You will enjoy the intimacy of our Coffee Shop, famous for its cuisine.
COMMERCIALIZING MEMORIES
the TEXAS
A BAKER HOTEL FORT WORTH

Houston, Texas

Good news for the Houston airport, according to genial Charlie Neuhaus. The runways are to be extended 900 feet, making them 2500 feet long, in order to better accomodate the new high speed transport ships of the airlines. A new steel hangar is to be constructed at once on the field which will relieve somewhat the present crowding in the existing hangars.

Wedell Williams Airlines have moved from the Rice Hotel to the Texas State, where the Bowen Airlines office is already located. Everett Stunz, Houston representative for Wedell, is nursing a broken finger, received in an automobile accident.

Looks as if the Houston pilots had better stick to airplanes; Harry (Botzy) Miller, "Bunker" pilot of the Fairchild, got a banged up chin and Flora Bess Maxwell, secretary to John Shaw, Bowen's representative, a banged up ankle in automobile crackups.

Captain Juan Raymos Munez, chief of the Salvadorian Air Corps, patronized American air transportation when he took a trip from New Orleans to Houston over Wedell Williams and from Houston to Brownsville on Braniff.

Jim Davis found use for his ambulance Waco recently when he flew a patient over to Louisiana.

A demonstration trip with the Lockheed Electra was made over the Wedell Williams airline recently when Don Marshall, Lockheed representative, flew officials of the airline from New Orleans to Houston.

Joplin, Missouri

H. G. Harper, manager of the Joplin port sold his Curtiss Junior to Dr. T. B. Ward of Fayetteville, Arkansas who will use it for training purposes. Harry Adams delivered it recently. To replace his Junior for his own trainer, Harper purchased a Velie Monocoupe from Chanute, Kansas, airport.

Frank C. Wallower, Jr., is seriously contemplating buying Clyde Thomas' Waco A and has been out buzzing around in it quite a lot the last few days. Incidently Mr. Wallower Sr. is very interested in flitting about and will probably be seen side by side with his son in the Waco.

Harold Jones went into a huddle with Tommy Burns at Neosho, Mo., and when they emerged he had Tommy's OX Waco instead of his Hisso Travelair. Both seem pleased and so . . .

Harper recently purchased a dandy Lycoming Stinson with which he is hopping passengers and making some cross country trips. He has made one trip to the Gulf taking Mr. Smoot, a Joplin business man.

C. K. Kost, local rival of Ernest Udet, passed his 300 hour mark Sunday, Oct. 13th, after less than eleven months since his first solo flight. And all in his little Aeronca. Almost an hour per day isn't such a bad average, at that! Men like Kost are a real asset to private flying.

Ed McCartney, on his fifth solo hop in his new Taylor Cub forgot to gun his motor on a high bounce when landing the other day and squashed his landing gear to some extent. Nobody hurt and after minor repairs Ed and his Cub are in the air again none the worse but perhaps a little wiser. When around the port and want Ed, just ask for "Pan-cake."

Everything that constitutes a Class A airport has been planned for Joplin and approved by everyone in Jefferson City and Washington and is now awaiting the signature of the president when he arrives back in Washington. Mr.

Hugh Smith, vice-president of American Airlines sent his technical engineer, Mr. Key, to personally supervise the plans with the prospect in view of making this one of the finest airports in the Southwest. Mr. Smith was very enthusiastic about the location of the port, the contour of it and the surrounding country.

Marshall, Missouri

Angelo Gererra of St. Louis made his first solo flight under instruction of Lawrence Short in the Barling on October 19th. Several other students are well on the way towards the goal. Renewed interest is being created among the boys with the Barling, which is proving itself valuable and ideal for primary training.

The J-1 Standard raffled off last month was won by John Pemberton of Slater, Missouri. He has never been up in an airplane and further, states he never expects to. Consequently the ship is for sale again. Too bad it couldn't have been won by someone who would have put it to good use.

A. S. Kotch, Bureau of Air Commerce inspector for this district made his regular visit to the local port during the middle week in October.

Every time we have a full moon and good weather, one can expect to see Billy Murrell taking a night ride in the Waco F.

Nashville, Tennessee

Air Navigation Week, beginning October 14, was celebrated in Nashville with a diversity of activities.

Governor Hill McAllister issued an official proclamation designating October 14-21 as Air Navigation Week for the State and in his message stressed Tennessee's opportunities and benefits from aviation, both in the past and the potentialities of the future.

In cooperation with the week's programs the Nashville postoffice prepared and distributed an air mail guide giving schedules between this and other principal cities of the country. These guides were supplied postoffice patrons through the offices of William Gupton, Postmaster, and W. S. McKinstry, Superintendent of Mails.

In observance of Air Navigation Week planes of the 105th Observation Squadron of the Tennessee National Guard staged a mock night air raid on the city of Nashville. Three flares of 3,000,000 candlepower were released over various points of the city showing the people how the city could be lit up at night to permit accurate bombing and machine gun fire. Major Walter Williams was in charge of the flight, and other pilots were Lieut. Opie Lindsay and Lieut. W. B. Catron. Observers were Lieutenants J. M. Marrar, R. S. Farrar, and James W. Hurt, Jr.

The new Eastern Airlines' air mail, air express, and air passenger service from Miami to Chicago, through Nashville where the northbound and southbound planes will cross the Sky Harbor each night, was officially opened October 15. This new route will use the bi-motored Lockheed Electra monoplanes, which carry 10 passengers, a pilot, and a co-pilot. The Eastern Airlines Company

NOT a little of THIS and THAT but EVERYTHING!

For Manufacturer, Airline and Private Owner, is at your demand when you are served from the

MOST COMPLETE STOCK

of Airplane Supplies and Accessories in these United States

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BREDOUW-HILLIARD
AEROMOTIVE CORPORATION
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KANSAS CITY, MO.

One Day Service

U. S. Department of Commerce Approved Repair Station Number 48

Overnight Service and Prices that are Always Competitive. Write for Catalog or let us quote you on your requirements.

have opened offices in the Andrew Jackson Hotel in Nashville.

Within the next month American Airlines will open passenger service from Nashville to Knoxville, Bristol, Roanoke, Lynchburg, and Washington. Tri-motored Stinson planes will be used on this run.

Lieut. R. O. Lindsay, pilot in the 105th Observation Squadron, and at present assistant state director of aeronautics, has recommended to Governor McAllister by the state aeronautical commission for promotion to director. Lieut. Lindsay has been acting director for some time. Lieut. Haywood Norman, Jr., observer in the 105th, has been recommended as assistant director.

Lieut.-Col. Henry W. Rogers, 55, formerly of Nashville died near Chicago and will be buried at Earlington, Ky. For the past seven years he was superintendent of Bowman Field, the Louisville and Jefferson County, Ky., airport.

Five planes of the 105th Observation Squadron will leave Nashville October 22 for the National Guard convention being held October 24-26 at Sante Fe, New Mexico. These planes will be piloted by Major Williams, Captain McCoy, Captain Outlaw, Lieut. Lindsay, and Lieut. Catron. Observers have not yet been detailed for the trip. The flight will return to Nashville October 27.

Billy Lindsey, Nashville stunt man with Louie Gasser's Flying circus, established a record by riding an airplane from Nashville to Birmingham, a distance of 200 miles, standing on the top wing of a plane piloted by Winsor Ford. The flight was sponsored by the Gulf States Steel Company.

E. T. Birchfield, in charge of the Department of Commerce airway radio station at Donelson, threw his station "open to the public" during Air Navigation Week and all who were interested in the workings of this phase of aviation were personally escorted through the station by Mr. Birchfield.

Oklahoma City, Oklahoma

The Aviation Club has set the date of November 15 for a bang up dance, in celebration of Dr. John D. Brock's 6th anniversary of daily flights. In previous years this celebration has always been held in Kansas City, but Oklahoma City has been chosen this year to do honor to this outstanding southwestern flyer, and all those of the industry who anticipate attending the gala occasion will fly to our fair city and join in the festivities.

The Women's Aeronautical Association entertained with a hot dog boil recently. Originally scheduled to be held at Cliff Giblet's cabin, bad weather set in to force boiling the weiners at the Wiley Post airport.

Braniff Airways boast a new traffic manager in the person of Charles E. Beard, who recently replaced Nicholas Craig. From all reports and rumors, the new traffic chief knows the traffic end of flying from A to Z and gets the job done quickly and efficiently. Miss Dorothy Werner of Kansas City office has been paying the Oklahoma City general office a visit. Bill Salathe, fair-haired boy of the Braniff camp has been on the sick list for quite some time. We all wish for a hasty recovery.

Bill Bleakley, our genial red-haired airport manager, has turned out to be rather versatile since Benny Turner, aviation editor couldn't resist the P. G. A. tourney held at Twin Hills Country Club and someone had to pinch hit on his Sunday feature, "Aviation and Its Cousins." Bill undertook the assignment with a style all his own that clicked in fine shape.

Haskell Shaw soloed Charles Voff last month. The instructor is with Clyde Nuckol's Southwest Aviation & Service Company. . . Benny Griffin came in with a hello and good-bye, departing via American Airlines on a southern tour given over to the establishment of blind landing systems under the direction of the Bureau of Air Commerce . . . Wiley Post Aircraft will break ground in sixty days for their new hangar and many modern improvements. The contract has been signed and affairs are all ready for the final move from Curtiss field to Municipal Airport . . . Johnny Burke is as busy as a one armed paper hanger.

San Antonio

The culmination of Air Progress Week in San Antonio was a huge airshow held on the last day at Winburn Field, under sponsorship of Fred Harman, manager of the field. A model contest with loving cups for rewards, a boy and girl student pilot spot landing contest and a parachute jump by Joe Long were the principal events. Mayor Quin issued an official proclamation for the week which was held in association with the National Aeronautic Association of which C. F. Dieter is chairman of the local chapter.

The seventh annual convention of the Aero Medical Asociation, a national organization composed of physicians both civil and military who have completed a course in aviation medicine, was held in a three day session in San Antonio last month. The visiting physicians were conducted on a tour of Randolph Field and the School of Aviation Medicine. Addresses were made at the convention dinner by Dr. Braswell, Eugene L. Vidal and J. Carroll Cone.

According to rumors, a unique organization is being formed in San Antonio—one in which the membership requirements are rather severe. It will be composed of pilots who have actually figured in a real crack-up, thus putting it in the class of the Caterpillar Club, a club which you join by accident.

The army's large non-rigid dirigible, TC-13 met with a crack up on an attempted take off last month here. It was laid up for about two weeks for repairs and was scheduled to leave Brooks Field on its route from Langley Field, Va., to Sunnyvale, Cal., where it is to be permanently stationed. The dirigible can carry 1,450 gallons of gasoline and requires 120 men for the landing crew. Two bombers preceded it with a portable landing apparatus for emergency use.

M. F. Clark, aeronautical inspector, had a busy day when he awarded transport licenses to Lieuts. Daniel W. Pippinger and Edward T. Hausafus, Jr.; a limited commercial to Marlin Fischer and private licenses to Clyde Fowler, Clyde Naftger and Herbert Mueller.

Herbert L. Gray, Jr., of Georgetown, purchased a Taylor Cub through Hangar Six, Inc., and flew it home from the factory. He will inaugurate a flying school in Georgetown and has named it the "Gray Wings Flying Service."

Curry Sanders has received a rating for the Lockheed Electra which he flys for R. W. Norton. This is one of the most luxurious private airplanes in the country.

St. Louis, Missouri

Passenger traffic in the three summer months at Lambert-St. Louis Municipal Airport scored a large increase over the same period of 1934. The passenger arrivals in the months of June, July and August, 1935, totaled 2493 as against 1,458 in 1934. Passenger departures in the past Summer totaled 2445 as compared with 1532 in 1934.

An appropriation of $5,000 to buy equipment for a

radio approach system at Lambert-St. Louis Municipal Airport, has been approved by the St. Louis Municipal government. It will be a WPA project.

The Airplane Sales Corp. has been organized. Rearwin products will be distributed, and charter and sightseeing trips organized. J. A. Davis, prominent St. Louis business man, is president of the new company. R. E. Patton is vice-president and Joe H. Imeson, well known pilot, is secretary-treasurer and manager. The latter has held a transport pilot license six years and has done practically all of his commercial flying at Lambert Field. The officers of the company visited several aircraft factories and selected the Rearwin.

Brayton Flying Service, Inc., headed by Clyde Brayton, has taken over the Taylor Cub airplane distributorship for Missouri. Three Taylor Cubs have been sold, including one to E. Z. Newsom of Popular, Bluff, Mo. The Brayton Flying Service has bought one for student training and for demonstration work. It is the Continental A40-2 with enclosure.

The Taylor Cub is economical in flying, according to Clyde Brayton, the plane using only six gallons of gasoline in two and one-half hours of cross-country flying, and one quart of oil in six hours flying on another trip. The plane lands at 28 miles an hour and has a cruising speed of 68 miles an hour.

St. Louis Flying Service, Inc., has taken over the Cessna airplane distributorship.

Norman Anishanslin has been made manager of the ticket office at the Lambert Air Terminal. He had been employed for nine years in railroad transportation offices including the Missouri Pacific and L. & N. For the last two years he has been employed as an assistant in the air terminal ticket office.

Wm. Larner, TWA field manager at Lambert Airport and C. R. Beindorf, United Air Line pilots on the Chicago-Newark flight, bagged some big game in the Northwest on a hunting trip. Bill Larner got a deer, elk and antelope, while his hunting mate brought down an elk and antelope. C. E. Hamilton and Frank Scolkauf of Dallas, Texas, business men, were also in the same party, the former getting a moose, elk and antelope, while the latter got an antelope and elk. They made their headquarters in Teton National Park, Wyoming.

Frank Robertson, president of the Robertson Airplane Service Co., Lambert Field, who went to Tucson, Arizona, in July, for his health, is improving, according to word received at his office.

The Mississippi River Fuel Corp., St. Louis, Mo., has purchased a Lambert De Luxe plane from the Lambert Aircraft Corp., and will use it in patrolling the company's 500-mile natural gas pipe line between Monroe, La., and St. Louis. Clair B. McMahon heads the company's aviation department. The Lambert plane replaces a Robin used since the inception of the aerial patrol more than two years ago.

The Robertson Airplane Service Co., Lambert Field, recently serviced the private planes of several prominent persons. Among them were the Waco of Betty Lund, widow of Fred Lund, the screen actor; the Boeing single seater of Art Goebel, who was here on a skywriting mission, and Frank Phillips' new Boeing executive type of airplane.

Topeka, Kansas

Lieutenant Edwinson attached to the 8th Pursuit Group, Langley Field, Virginia paid us a visit while on his furlough flying in a USA-25 Curtiss Hawk. Lieutenant Edwinson gave us a very nice demonstration of the efficiency of an army training in the way that he handled his ship.

R. E. Tutcher of Overbrook, Kansas, flew in, in his reconditioned Robin.

Kansas has a new inspector, Mr. James Douglas, who flys one of the new 145 Warner coupes of the Bureau of Air Commerce. He certainly has all the earmarks of being a good inspector—tough enough to make us dig, and at the same time human enough to command respect.

Mr. R. W. Horsefield, formerly known as the Topeka Torpedo due to his epoch-making trip from Kansas City to Miami, Florida with only fifty three hours solo and very unfavorable weather conditions has just taken a new Lambert Monocoupe. It is, we understand, one of the first ones with the wide undercarriage and is really a beautiful thing to look at. It evidently flys just as well as it looks.

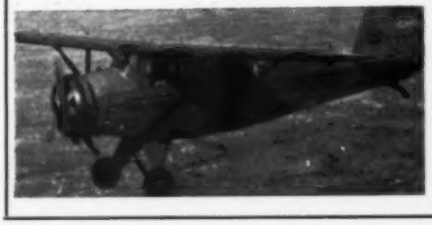
Mr. R. W. Thompson paid us a visit in a Heath of his own construction powered by a Continental A-40 engine.

Mr. Frank L. Cushing of Hastings, Nebraska, stopped in over night with his Waco. Frank is very proud of the Waco and he has just reason to be so.

The Phillips Petroleum Company Boeing 247-D piloted by Mr. Clark has been here twice this month and we hope to see more of that class of airplane coming in regularly.

Mr. Jack Frye flying a Northrop Gamma was in here for about a half-day.

Mr. W. G. Wood, manager of Topeka Flying Service, attended the air show at Ottumwa, Iowa, and carried off a few honors. In the 300 cubic inch or under race, he placed third, two Lambert Monocoupes coming in first and



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has decidedly more speed than any airplane under twice its price; other performance is comparatively the same. It is the only airplane in its price range which cruises over 100 miles per hour, and it lands about as slowly as any of them. It uses three gallons and three quarts per hour for student training and is an ideal student training plane. Cross country, 105 miles per hour cruising speed is interesting. Time payments. $1,795.—A. T. C. No. 567.

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second; he placed second in the stunting event with a Monocoupe first; Wood took third in the dead stick landing event and the first two places were taken by a Lincoln P. T., Kinner powered, and a J-5 Lockheed.

West Palm Beach, Florida

"——and the first shall be last."

Although West Palm Beach was one of the first communities in Florida to maintain an airport and flying school, it will be one of the last important cities in the state to establish a commercial port handling passenger and mail traffic.

When the field now under construction is opened to Eastern Air Lines transport planes during December or January an embarrassing gap in eastern seabords service schedules will be filled.

A grant of $108,071.40 under the Works Progress Administration, plus a local contribution of $19,595.83, plus considerable actual construction progress since the new project was started in mid-August, are giving local enthusiasts their first real hopes in years for a commercially successful airport.

Because of the fact that wealthy-exclusive Palm Beach will provide an unusually high per-capita quota of air travelers and many private planes owned by winter residents; and West Palm Beach because of its resort trade, will furnish a better-than-average share of transport passengers, the new airport when ready is expected to be one of the most important purely domestic stops in Florida, where fine flying is possible all year.

The layout will include six hard-surfaced runways, hangars, lights and weather station when completed. Work is under supervision of John Rhodes, airport supervisor, Works Progress administration, Aviation division, Florida State Road department.

A level tract of 440 acres, three miles from the post-office and business district, acquired under sponsorship of the Palm Beach County Airport association and now owned by the county government, is being graded preparatory to installation of rock runways. The field is adjacent to the airways beacon.

T. P. Caldwell, division passenger agent for Eastern Air Lines has announced his company will establish daily service at the port as soon as the field is in condition. The post-office department has designated the port as a stop on the Miami-New York-Chicago airline. The southeast-northwest runway will be completed first in the hope that service may be launched at that stage of construction. Since the grading for all six runways may be done before the rock surfacing is started, it is the belief of WPA officials that all runways may be completed in short order after the material is delivered.

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Wichita, Kansas

The Beech Aircraft Company has recently announced the granting of Approved Type Certificates on the B17L and B17R models with float installation. The B17L is powered with the Jacob 225 horsepower engine while the B17R is fitted with the Wright J-6 420 horsepower engine.

The fact that each of these two ships are fitted with retractable landing gear results in a very interesting feature on the float models. To attach the sea gear it is only necessary to retract the landing gear and make the necessary attachment of floats to fittings provided.

The value of this feature is quite apparent and means a great deal to the operator located where flights are made to points where only water landing facilities are available and over rugged territory having large streams. The convenience of the arrangement is splendid. The approval of the two models includes an increase in gross weight sufficient to care for the extra weight of the Edo floats and thus the payload is the same as for the land models. Leaving the land gear attached, however, reduces the payload by 100 pounds. High speed for the Jacobs model is 143 miles per hour while the B17R cruises at 154 miles per hour.

Isthmian Airways Inc., of Panama recently purchased a float equipped B17L model for charter work in Central America and surrounding territory. It is planned to employ the airplane for flights into the interior of Mexico and South America carrying sportsmen and travelers on hunting and scenic expeditions.

A B17R will go to the Mouton and Six Company of Burbank, Calif. where it will be used in charter flying and as a demonstrator in Beech Sales Work. The ship is completely fitted with blind flying instruments and a Fairchild Radio Compass—in step with the modern trend to all-weather flying.

The Beech Company is also pushing work rapidly on a new twin-motored low wing monoplane which will carry eight passengers. Powered with the Jacobs 225 horsepower engines, the new ship will prove of great interest to aviation people and details will be given later when the model is announced by the Beech concern.

Dwane Wallace, President and General Manager of Cessna Aircraft Company announces the delivery of a C-34 model to the St. Louis Flying Service, distributors for Cessna planes in Missouri, Illinois, and Indiana. The Cessna plant is now building one ship every ten days and sales prospects are very good for the future.

The Stearman Aircraft Company is now working two shifts in some departments of the factory and will have the first ship of the recently signed Army contract completed in a few days. In addition to Army and Navy awards in this country, South and Central American countries have their eyes on the Stearman training model. Major Ivan Carpenter Ferreria, Rio de Janeiro, aeronautical engineer and technical advisor for the Brazilian air corps, recently spent a day at the Stearman plant conferring with officials and inspecting the factory. This is in connection with a bid that the Stearman firm is making for a group of training planes for Brazil. Major Ferreria was well impressed with the activity here. It is expected that Ferreria will return to Wichita in the near future for further conferences from New York where he is stationed.

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WANTED: Two good used seat pack chutes. Must have been recently packed and inspected. Box 931, Southwestern Aviation.

WANTED—Inland Sport or Fairchild 24. Must be in good condition and never cracked up. Send your best offer to Box 1157, Southwestern Aviation.

WANTED FOR CASH—Velie M-5 or motor of about same horsepower. Give best price in first letter. JOE PENNINGTON, Sanderson, Texas.

FOR SALE—Curtiss Wright Air Sedan, 185 New Type Challenger motor. Very little time on ship and motor. Wheel brakes, dual control, electric starter. Complete set of instruments. For further details write TEXAS FAIRCHILD SALES CORP., Municipal Airport, Houston, Texas.

WANTED TO BUY two sets of Challenger Robbin wheels, 30x5-10. Bendix brake wheel. Write immediately. Need urgent. Box 920 Southwestern Aviation.

POSITION WANTED: Employed transport pilot with 2500 hours varied flying experience. Nine years in aviation sales and executive work. Prefer connection with private owner with opportunity to work into business. Complete flying and business references furnished. Honest and reliable. Write or wire care Box 910, Southwestern Aviation.

FOR SALE. Travelair J-5 220. Just overhauled, special paint. Racing shields, air speed, bank & turn, metal prop, recently recovered. Bargain for quick sale. E. L. Luke, San Benito, Texas.

FOR SALE AT A SACRIFICE—Tapered wing Waco in excellent condition. Will consider trade. Box 1110, Southwestern Aviation.

FOR SALE—Two dozen slightly used K. E. Wasp valves. Recently tested and approved with stretch guage. Box 1120, Southwestern Aviation.

WANTED TO TRADE—Flying time and complete instruction for light late model automobile. Box 1130, Southwestern Aviation.

FAIRCHILD—Latest series, flap equipped, 24 with special instruments and Bedford Cloth upholstery. Less than fifty hours time. Sacrifice for cash, or will accept cheap ship as part payment. Write or wire Jefferson M. Hooton, Municipal Airport, Houston, Texas.

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One Right Aeronca Wing in Good Condition.

Inquire for prices on Wasp, Kinner and J-5 parts.

Szekeley parts, including crank case section.

RITCHEY FLYING SERVICE

Meacham Field — Fort Worth, Texas

From Washington

(Continued from Page 13)

work. One of these planes formerly held the world's amphibian speed record at 191 miles an hour.

Weather Bureau Applies Air Mass Analysis

AIR MASS analysis, the newest weather forecasting aid, in general use for many months by the air lines, has been accepted by the United States Weather Bureau and will go into application at the field stations. W. R. Gregg, chief of the bureau made the announcement last month.

After several months of preliminary work, specially trained meteorologists in the central office here in Washington are now able to map the various air masses and their "fronts" with greater accuracy than heretofore possible, according to Mr. Gregg.

Formerly, maps showing only the more general conditions as wirelessed in each morning to the bureau were utilized. Under the new arrangement which has already gone into effect, a summary based on the 8 a. m. weather map and describing existing air masses and their fronts will be transmitted by airway radio and by teletype, daily except Sundays and holidays, from the central office. From these summaries, maps will be prepared at the various forecasting centers in the field.

Mr. Gregg said the summaries will serve also as a check on the individual deductions of field observers in the practical application of air mass data. The bulletins from the central office will embody the conclusions of the best trained air mass analysts in the bureau.

Bureau Approves WPA Projects

THE Bureau of Air Commerce has approved a $17,000,000 airport improvement program of the Works Progress Administration. The program would involve building or improvement of 250 airports. The Bureau still has 500 more projects under consideration.

Clicks From the Clouds

(Continued from Page 10)

drug store. Their specialty is snap shot finishing and your commercial photographer will take a great deal more care with your negatives than the average finisher. He can often bring out things that are not ordinarily apparent, for he will know just what you are trying to get. Second, keep an accurate record of your first three dozen or so shots—length of exposure, the F opening of the lens and the time of day. In the latter connection, don't try to shoot too early in the morning or too late in the afternoon; after ten and before four is a good rule for time.

The various camera companies will be more than glad to give you any information you might desire. One of the photo-electric cell exposure meters will be a big help to you in your initial attempts on ground shots. The Leudi visual type exposure meter is an excellent and inexpensive meter.

Incidentally, don't confine yourself to obliques. Get some shots of those beautiful cloud formations with, perhaps, another ship outlined against them. The higher air is clear of dust and soot and the reflected light from the clouds is tremendously bright so stop the lens down to about F:8 and shoot at about 1/500. This type of pictorial view is often quite saleable to the magazines.

Two excellent books are "How to Make Good Pictures," by the Eastman Kodak Company (50 cents) and "Photography for the Amateur," by George W. French, published by the Falk Publishing Company. There are also a number of books written exclusively about aerial photography.

This has been a rather skimpy discussion and mention of many cameras, films and accessories has been necessarily omitted. After all, photography from the air is mainly a matter of experimentation for the individual. But get into it and you will quickly acquire the technique, have a bit of fun and get some financial returns. Keep your camera lens protected; don't allow any one to touch it with their fingers, for human hand oils are injurious to this delicate bit of glass work. Wipe the lens only with a special lens tissue or a very soft and clean cloth—the lens is the most important part of your camera.

Cameras especially designed for aerial work may seem a bit high priced at first glance, but one must bear in mind that the scientific equipment will do a better job than ordinary cameras and a few good shots will quickly repay the operator for the price of the camera.

Tie a rope to your camera before you go up and may all your negatives be positive!

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of SOUTHWESTERN AVIATION, published monthly at Fort Worth, Texas, for November 1, 1935.

State of Texas,
County of Tarrant, ss.

Before me, a notary public in and for the State and County aforesaid, personally appeared A. T. Barrett, Jr., who, having been duly sworn according to law, deposes and says that he is the General Manager of SOUTHWESTERN AVIATION, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, Southwestern Aviation Publishing Company, Inc., Fort Worth, Texas.

Editor, George E. Haddaway, Fort Worth, Texas.

Business Manager, A. T. Barrett, Jr., Fort Worth, Texas.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

George E. Haddaway, Fort Worth, Texas.
A. T. Barrett, Jr., Fort Worth, Texas.
John W. Herbert III, Fort Worth, Texas.
D. L. Johnson, Fort Worth, Texas.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent of more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is: (This information is required from daily publications only.)

A. T. BARRETT, JR.,
Business Manager.

Sworn to and subscribed before me this 1st day of October, 1935.
(SEAL) W. C. GRIFFIN.
My commission expires June 1, 1937.)

Chicago — Burlington — Kansas City — Wichita — Ponca — Tulsa — Oklahoma City — Amarillo — Wichita Falls — Fort Worth
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